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User Research and Analysis

UX and Interaction Design

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What do we mean by 'older people'?

The number of older people has vastly increased within the population, which in turn has also increased the digital segregation between the younger more informed people and the less technologically literate older generations. According to a study undertaken by Bárbara Barbosa Neves in 2012 ^[1], 'most developed countries legislatively set the age of 65 as a cutoff to define an elderly, or "senior", person -associating the chronological age (years lived or years after birth) with the statutory retirement age at which one may legally begin to receive pension benefits'.

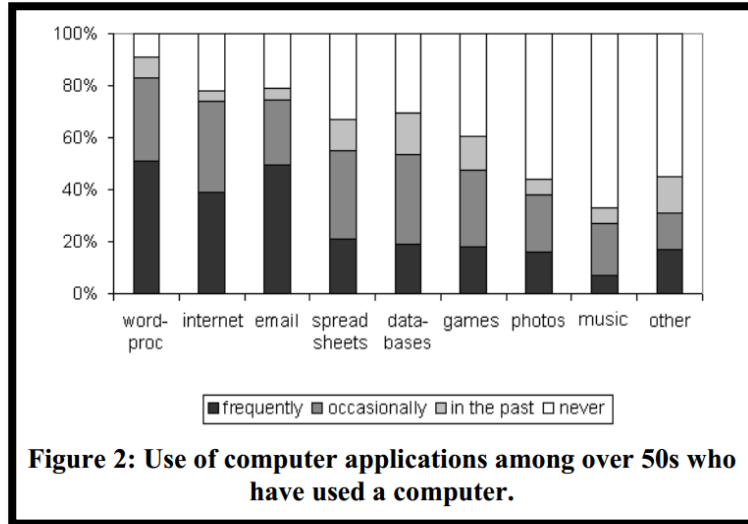
" The majority of European Countries use 65 and over as a cutoff, while the World Health Organization (Cf. WHO) and the United Nations use 60 and above (Cf. UN, 2008). But both organizations use the *elderly dependency-ratio*: a statistical measure that refers to the elderly as someone of 65 years of age or above." Bárbara Barbosa Neves (2012) ^[1]

The web definition of an older person consists of 'ages nearing or surpassing the average life span of human beings' (Wikipedia)^[2]. However with life expectancy constantly increasing, the age range that was seen as old has now become young which is why the definition of 'older people' has become retirement age. The main factors which relate to biological age (other than appearance) are the deterioration of the physical and cognitive capabilities of a person which have become the foremost contributing factors to the age based digital divide we are faced with today.

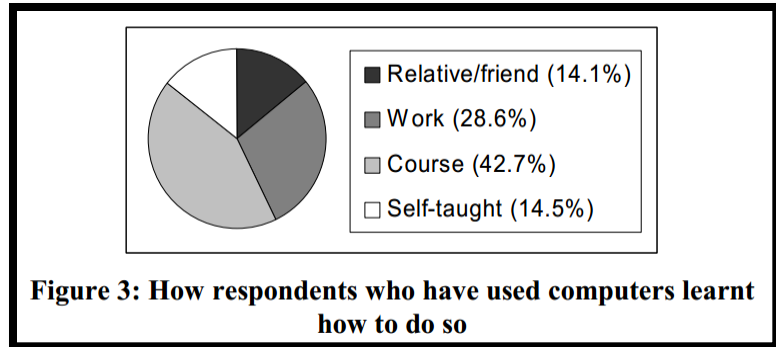
How do older people use technology?

The leap into the digital age from the analogue age has been much more substantial and difficult than the leap from Android to iPhone. The leap effects the way in which older generations interact with technology and understand it. From observing a video report entitled 'The Cambridge lab where they test how elderly people use technology' (Dougal Shaw, 2012)^[3], it became apparent that older people are more accustomed to using analogue technology than digital. The subject (Archie Ferguson, 75 years of age) struggled to understand simple touch screen commands on a mobile phone such as the 'swipe to answer' function and instead simply pressed harder, a trait common in the older generations.

According to 'Helping older people online' (Wendy M Grossman, 2011)^[4] viewing pictures and video clips of family members, emailing and using social networks to stay in touch with family and friends are the likely 'motivators which encourage older people to use computers and the internet'. Accessing news and entertainment as well as radio and podcasts are also reasons that older generations use technology. 'Older adult's use of computers: A survey' (Joy Goodman, Audrey Syme and Roos Eisma, 2012)^[5] elaborates on general areas for which older people use technology, using a survey carried out on 353 relevant participants.



The results of these surveys indicated that the internet, e-mail and Word-processing were the most common amongst used applications. The most common reason for use were for online shopping and keeping in touch with family members and the most common method in which the participants learnt how to use computers was through courses.



'Older adults' experiences with computer technology' (Paul A. Schlag, 2007)^[6] also contained table which summarised the several participants in a similar survey used their computers:

| Use | Participant |
|---------------------------------------|--|
| Internet News | Robert Shanahan, Lynn Shafer, Gary Jacobs, Betty Stewart, Fred Cook, Virginia Cook |
| Internet Research (medical and other) | Robert Shanahan, Lynn Shafer, Gary Jacobs, Betty Stewart, Fred Cook, Virginia Cook, Ann Pluett |
| Internet Learning | Robert Shanahan, Lynn Shafer, Virginia Cook, Ann Pluett |
| Internet Communication | Robert Shanahan, Lynn Shafer, Fred Cook, Virginia Cook, Ann Pluett |
| Internet Games | Robert Shanahan, Gary Jacobs, Betty Stewart |
| Internet Shopping | Robert Shanahan, Betty Stewart, Fred Cook, Ann Pluett |
| Internet Banking | Robert Shanahan, Lynn Shafer, Gary Jacobs, Fred Cook, Ann Pluett |
| Email | Robert Shanahan, Lynn Shafer, Gary Jacobs, Fred Cook, Virginia Cook, Ann Pluett |
| Text Chatting | Robert Shanahan, Gary Jacobs |
| Video Chatting | Robert Shanahan |
| Word Processing | Robert Shanahan, Lynn Shafer, Gary Jacobs, Betty Stewart, Fred Cook, Ann Pluett |
| Creating Spreadsheets | Robert Shanahan, Betty Stewart, Fred Cook |
| Creating Presentations | Robert Shanahan, Fred Cook, Ann Pluett |
| Scanning Pictures | Robert Shanahan, Lynn Shafer, Betty Stewart, Fred Cook, Ann Pluett |
| Editing Digital Pictures | Robert Shanahan, Lynn Shafer, Fred Cook, Ann Pluett |
| Creating Picture Slideshows | Robert Shanahan, Ann Pluett |
| Creating Digital Art | Lynn Shafer |
| Listening/Downloading Music | Robert Shanahan, Lynn Shafer, Gary Jacobs, Fred Cook, Ann Pluett |
| Composing Music | Robert Shanahan |
| Watching Movies | Robert Shanahan, Gary Jacobs |
| Listening to Audio Books | Robert Shanahan |

What obstacles do they face?

There have been a significant technological advances ever since the digital age began to spike around the 1900s and we have since become a more advanced society, leaving behind the older generation as they were unable to keep up with the change. This still remains unchanged today and is becoming a more prevalent issue in today's society. The differences in terminology and methods of use have created a very steep learning curve for the technologically illiterate older generations.

According to 'Helping older people online' (Wendy M Grossman, 2011)^[4] 'it was clear that problems were often caused by applications and their documentation being too complicated, with too much jargon and inadequate support, both during learning and on-going use'. It was also stated how some older people have visual impairments that make reading small text difficult or arthritis/tremors leading to restricted physical dexterity. Another important statement, one that is repeated throughout many sources, was that some older people could have cognitive impairment which make it difficult to remember the more complex commands and understand technical jargon. This in turn pushes older people away from new technology and remains the largest obstacle.

Lack of confidence has also become a major obstacle that older people encounter as the thought of learning how to use computers and understand complex commands is intimidating. "This lack of confidence is a major factor in older adults' ability to become proficient with computer technology, which unfortunately results in less computer use," (Dr. Patricia Boechler 2007)^[7].

Stephenson (2002) found several areas where older learners experienced anxiety in trying to learn computers. These areas are:

- Controlling the mouse
- The language used by the computer and computer instructors
- Not feeling in control of the situation
- The absence of easy-to-follow instructions
- The process of moving around the screen and accessing menus and programs
- Getting in and out of programs
- Feelings of inadequacy
- Feeling that computers are too complicated to be worth the effort

(Paul A. Schlag, 2007)^[6]

A table obtained from 'Seniors' Perspectives on the Barriers, Benefits and Negatives Consequences of Learning and Using Computers' (Margaret Richardson, Theodore E. Zorn, Jr. Kay Weaver. 2010)^[8] shows the results obtained from a survey analysing the obstacles that the older generation faced when using technology.

| Theme | Subtheme | Frequency of Occurrence of Subtheme | Definition | Sample Quotes from Men |
|------------------------------|-----------------------|-------------------------------------|---|---|
| Emotions and Attitudes | The unknown void | 9 | Computers represent a break with the past – a previously unknown quantity | It's a totally different world to what we're used to. I've grown up on a farm with a totally different background. From cows to computers it's totally different |
| | Anxiety & Frustration | 7 | Frustration in learning | Frustration...in learning, in remembering. At the beginning. Entirely at the beginning. |
| | Lack of Confidence | 3 | Falling levels of self confidence | Well the biggest one I think is the generic problem that when you are young you're indestructible but when you get older you lose confidence. |
| Declining Faculties | Mental Abilities | 10 | Failing short term memory and concentration | I suppose the main barrier is your memory. People show you how to do something and you see it but if you try and do it again next time you have forgotten how to do it. |
| | Physical Abilities | 3 | General Physical Health | Depending on health. Generally. |
| Financial Cost | | 7 | Costs related to acquisition and maintenance | They want to go on computers but not everybody can afford to go on computers. Yeah. You're looking at cost. It's a luxury more so than a necessity. |
| Age-Unfriendly Instruction | | 5 | | At SeniorNet we are all of a similar age and we talk like people of our own age and whereas if you go to a night school you may be with an 18 year old or 16 year old and trying to do the same things and you might get left behind. |
| Lack of social support | | 5 | | I felt if I'd only had somebody there just for an hour when it first arrived [complete the sentence] |
| Lack of relevance/motivation | | 2 | | You have to have that interest [to buy a computer] |

What are their computer skills?

Older individuals use technology for simple tasks such as emailing and viewing videos and images, as indicated previously. This revealed that due to a lack of technological proficiency or lack of interest, older people only use computers for simple tasks and therefore only become skilled enough to use the simplest of software applications, although simpler interfaces such as Eldy (a senior computer software interface) enables more complicated tasks to be performed easily by using a simpler interface.

According to a study undertaken by Bárbara Barbosa Neves in 2012 ^[1] in which a random stratified sample of 500 people (over 64 years of age) were interviewed, there were individuals aged over 64 who were very technologically proficient, regularly using their mobile phones or a computer to pay bills and access the internet whilst other individuals (the majority) were not as proficient, unable to view

the screen properly or press the correct buttons to form a SMS message. Some individuals did not know how to use a computer whilst others intermittently use technology with the assistance of friends or family members. This shows that, although some are technologically proficient, the majority are still unable to use or are intimidated by computers and complex applications such as the internet which is an issue that must be addressed as the number of older people in the population continues to increase.

Table 3: Reasons to use and not to use mobile phone, computer, and Internet (survey results)

| | Mobile phone N= 362 (users) N= 138 (non-users) | Computer N= 66 (users) N= 434 (non-users) | Internet N= 49 (users) N= 451 (non-users) |
|--------------------|---|--|---|
| Reasons to use | -To talk to family (40.2%) -To talk to friends (24.9%) -For emergencies (21.6%) | -To go online (44.8%) -To write texts (24.1%) -To play (8.4%) | -To search (25.4%) -To send emails (21.2%) -For leisure (13.2%) |
| Reasons not to use | -Don't need to use it (34.2%) -Don't know how to use it (21.7%) -Cost (17.4%) | -Don't know how to use it (38.8%) -Don't need to use it (23.5%) -Cost (11.1%)/ Age (11.1%) | -Don't know how to use it (44.7%) -Don't need to use it (43.5%) -Don't have a computer (11.8%). |

Interview Analysis

Before each interview commenced I informed the individuals that they had the option not to answer some questions, as I am aware that some of the less technically proficient individuals feel less adequate because they are unable to keep up with current technologies.

Through the qualitative data I have gathered (and also analysing each team members interview notes) I can see that almost all of the participants own a computer, which indicates that more older people are using computers and fewer are technically illiterate. Devices such as the iPad are very simple to use which is reflected through the fact that over 40% of the participants own an iPad. The simplistic navigation used, similar to that used by Eldy (an interface created to simplify normal computer tasks such as e-mailing and browsing shopping sites targeted at older users), which display large icons that perform all the tasks that would otherwise be difficult to perform on an ordinary computer, has played a major part in involving the older generations with the latest technologies.

There appears to be a link between technical proficiency and charities that individuals are involved in, which I believe is due to the fact that some users have the ability to research and get involved with greater ease. This suggests that more should be done to reach out to potential donators as they may be willing but are unaware of what there is or how to get involved. Mr. Patrick Odogwu was a perfect example of an individual who could be reached out to by a charity but the difficulties in using a computer and the internet create an obstacle that must be removed. Another interesting observation is that the individuals who supported charities often supported the same charities as their friends or popular charities. This seems to indicate that the participants may show how older people take a step back and allow more informed individuals to take the lead, which is why for example, instead of learning about computers, they would rather be informed which is better by a friend or relative. This may influence the content of the charity website we design as confidence is the key.

Those who owned and used computers, viewing and sending e-mails was what most of the participants used the internet for. YouTube and other commonly known applications were also frequently used which indicated that, as with supporting charities, older people tend to use what is known and approved of by the majority whilst more technically literate individuals would search for different things. This may impact how our charity is perceived by older people and perhaps shows that something must be done to gain trust and rapport from a weary reader.

Most participants felt that larger text was needed in order to make a website easy to read which reinforces the fact that a text size option should be included with the charity website along with understandable wording which contains the least amount of jargon possible. A simple navigation and uncluttered view seems to be the general requirement which also indicates that website navigation must stay consistent as well as avoid pages within pages which may become confusing to an older user. The best design approach is to ensure the website we will develop has a greater breadth rather than depth as keeping all of the options and pages at a top level will avoid any confusion as to where pages are located

The main frustration that participants experienced while navigating sites were when pop up advertisements appeared and when they could not find what they were looking for, from this it is easy to see that an easy to find contact page and less advertisements or irrelevant content is of the utmost importance as this could throw off an older individual that is finding navigation difficult. Small text and cluttered content seem to be the most frustrating issues that must be addressed if older users are to become more involved with current and future technologies. The interviews have given me a deep insight into the relevant issues and themes that have emerged from the interviews which will shape and dictate how the website is designed and developed.

References

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