Seniors go mobile

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# Table of Contents

1. Introduction
2. Theory
   - 2.1 Mobility and seniors
   - 2.2 Stigmatizing
   - 2.3 Context
   - 2.4 Accessibility criteria for elderly mobile users
   - 2.5 Accessibility by size and zoom
   - 2.6 Readability by designing by high contrast and full colours
3. Case and Method
   - 3.1 User centered design
   - 3.2 Synergizing guidelines and verifying these with users
   - 3.3 Advantages by using interviews and user tests
   - 3.4 Interactive prototypes
   - 3.5 Analysis
   - 3.6 Analysis of our user group
4. Results and findings
   - 4.1 Results from user test 1
   - 4.2 Design choices for the high fidelity prototype
   - 4.3 Interactive prototypes tested at the users mobile phones
   - 4.4 Results from user test 2
5. Discussion
   - 5.1 Challenges in designing applications for elderly
   - 5.2 A diverse user group
   - 5.3 Positive towards mobile phone usage
   - 5.4 Difficult to include users in the initial user test
   - 5.5 Useful to include users in deciding functionality
   - 5.6 Focus on the users experience
   - 5.7 Limited functionality
   - 5.8 Consistent functionality
   - 5.9 Positioning of buttons
   - 5.10 Naming the buttons
   - 5.11 Prioritizing functionality at a limited screen size
   - 5.12 The balance between user input and theoretically guidelines
   - 5.13 Designing for Mobility
   - 5.14 Designing for users multitasking
6. Remaining work
7. Conclusion
8. References
1. Introduction

Mobile phones has been adopted by at least 60% of the world's population, and according to Pfaff (2010) it is generally rated as the most vital digital technology and plays an important role in many peoples' everyday life. It is commonly known that elderly often struggle with keeping up with new technology, and this may result in social exclusion. As there is a rapid increase in the number of elderly people in the total population (Plaza et al, 2011), it gets increasingly important to adapt technological products to all citizens. One of the most difficult problems faced by the elderly when adopting technology, has been that the user interfaces is difficult to use. Some elderly suffer from cognitive, dexterity and visual deterioration as growing old changes the physical and cognitive capabilities of humans (Plaza et al, 2011).

From the second quarter of 2011 until the same period this year, the number of active users of the Internet between the age of 55 and 64 increased from 89% to 94%. For the population between 65 and 74 years of age, the numbers of active internet users increased from 67% to 74% (SSB, 2012). The increase in elderly that use the Internet in Norway, indicates that elderly are open to learning new technology. Elderly are willing to spend time and money on technology if they gain value from it.

In this report we will develop a prototype for a mobile application for a Norwegian niche dating website; 50PlussTreffen. It provides dating services for the older segment of the scandinavian population with a lower age limit of 50. Consequently, the dating website is strongly concerned with having a universal design that allows all of its users to utilize the service.

50PlussTreffen provides a service where single or lonely seniors can find new friends or a partner. By creating a mobile site in addition to the desktop version of the website, we aim to make the solution usable in multiple situations and at multiple locations. According to 50PlussTreffen, the value provided by the dating service is perceived as high by the users of the website. Based on this, we believe seniors will be willing to spend time learning how to use the application.

Accessibility and universal design or design, are concepts that ensures that the product is available to all user groups (Asbrink & Beekhuyzen, 2003). In this report, we are concentrating on the accessibility issues. The focus is on the elderly and their challenges using and operating
touch phones. In this context, our research questions are:

- How does universal design and accessibility principles apply to mobile interfaces for seniors?
- Which challenges do designers meet when developing a mobile version of a website for seniors?

We hope to develop a service that is both appealing and accessible to senior users. To do this, we have developed a prototype based on accessibility driven user centered design. We start by analyzing theory, user demography and user needs. We develop a prototype based on this and on accessibility guidelines, and test that the final version is usable, motivating and accessible to our users.

2. Theory

2.1 Mobility and seniors

The role of the mobile phone has changed significantly over the last decade. From the first mobile phone was established in the early 1980s, with its sole purpose to execute mobile phone calls (Pfaff, 2010), it has evolved into being many peoples main means of communication and an important tool for information gathering. However, the technology is evolving rapidly and many find it difficult to keep up with new technology and new practises, the elderly in particular. One of the most difficult problems in adopting new technology has been that of user interfaces which are often not well-suited for elderly users, as growing old inevitably changes the physical and cognitive capabilities of humans (Plaza et al, 2011). The aging population results in a growing need to adopt new practices for supporting the elderly in their everyday lives. To create an inclusive society, technological products and services must be adapted to the needs and preferences of all members.

Mobile technology can play a significant role in supporting elderly people and may allow them to live high-quality lives. Older people can achieve benefits from the assistive technologies, that may help them to maintain their independence, social connectedness and sense of worth in the face of declining health or limited capabilities. They may also offer new and empowering opportunities to improve their quality of life. According to Hardill & Olphert (2012), a growing number of older adults possess mobile phones, but the extent to which it is integrated into the
person’s life varies greatly. They explain that some only use it for its simplest purpose, to substitute a landline to keep in touch with friends and family. The more experienced users use the phones as a small computer, and integrates this into server aspects of their everyday life.

However, the latter is preferable, as one of the critical impacts that technology may have on someone’s everyday life, is the potential of changing the patterns of urban way of life (Hardill & Olphert, 2012). Castells (2001), agrees and explains that technology may result in social exclusion and inequality since cyberspace is increasingly turning into a social arena. This indicates that those with knowledge and ability to fully take advantage of the technology will have an advantage to those who are unable to do so. This trend is then compounded by the continual evolvement and enhancement of the technology often leads to increased complexity. According to the Digital Inclusion Panel in the UK (2005), it has been predicted that significant numbers of older people, will continually and increasingly be excluded from this technology in the future. Consequently this may result in reduction in their quality of life and independence (Hardill & Olphert, 2012).

2.2 Stigmatizing

Plos (2006) argues that designers should care “not only about usability dimensions but also about the image and values conveyed by the products, in order to make them acceptable in our social environment” (Plos, 2006, p. 2). If the product is labeled for disabled people, it could have a stigmatizing effect and the intended users could reject the product.

Plos (2006) designed mobile phones for users with special needs, this differs from our project since many of the users will not have any special needs. We want our product to be usable to most users, but we do not want the design to have a stigmatizing effect. It is possible to adopt an universal design approach and avoid the stigmatizing effect since universal design “specify that a product should not be specialized for any particular population but may be suitable for most users.” (Plos, 2006, p.2). One argument for universal design is to make products that benefits all users and that should benefit users without special needs as well. This might also apply to designing products for seniors. Tore Langemyr Larsen from Seniornett stated in an interview 14.11.2013, that seniors are customers with need for accessibility and motivating services. He emphasizes that if the solution provides usability and accessibility for seniors, it will also benefit other users.
Larsen addressed that seniors did not want to use products that was perceived as stigmatizing for them. He used the Doro phones as an example of a product that most seniors did not want to use because of how it is perceived. Another example was the security alarms that seniors keeps around their necks in case of falling. He claims that their design is unappealing. The security alarms could easily have been designed as a necklace pendant to make them less stigmatizing to wear. We aim to make our solution available to users at their own phones.

The social aspect of 50plusstreffen might be motivating for seniors. Quite many seniors are single and many would like to have a more active social life. Seniornett says that dating services are popular for senior citizens. This is in accordance with the results from a questionnaire conducted by the owner of the dating service in autumn 2012 (Kamalaraja, 2012). The questionnaire revealed that most users (72%) register themselves as members at multiple dating sites simultaneously when they are looking for a new partner, but probably not as paying members. This may indicate that the stigma by using a website for seniors is not present when the motivation to find a partner is strong.

2.3 Context

When developing a mobile version of a desktop website, the designers have to make a careful choice of which functionality to make available through the mobile application. Several aspects must be taken into consideration when making this decision. Context is one of them. Under what circumstances and in what context will our target market typically use the mobile of the dating website? How, or to which extent, will the context affect their use of the different functions and activities of the mobile app?

The user tests revealed that users in all likelihood will use the mobile app both at home and outside, in different situations and environments, at all times. They will presumably use the app anywhere and in any context, limited mainly by physical constraints, such as the small visible area of the mobile touchscreen and the operation of the mobile keypad, rather than context. Larsen from Seniornett confirmed this assumption in an interview conducted on 14 November 2013.

Agre (2001) argues that context must be understood as aspects of physical places as well as human institutions. Traditionally, physical places have created strong expectations about the activity taking place. Wireless information services have broken down this mapping between
architecture, practices and institutions, allowing every relationship to be continually present in every place, every activity to take place anywhere. Seniors, who have lived the majority of their life before cell phones became common, brought up to respect social conventions of behavior related to institutions and physical places, are they likely to act differently than the younger digital generations? Will this affect their desire to use some of the features of the mobile app? According to our findings, through the user tests and the interview with Seniornett, this does not appear to be the case. The assumption that motivation to find a new partner is the main incentive for using the app, still holds the target.

2.4 Accessibility criterias for elderly mobile users
The increasing use of mobile screens instead of desktops introduce some usability issues, because of the small screen, the small keypad and the reduced bandwidth. The inability to operate small screens could exclude certain users. By providing mobile sites with universal design and accessibility features, this gap could be narrowed (Guerreiro et al., 2013). We will focus on following some guidelines for accessibility. This will ensure that the site is accessible and usable to most users. WCAG (2009) shows how to merge mobile best practices with WCAG 2.0 (Web Content Accessibility Guidelines) guidelines.

Recommendations of how to make a website accessible, are presented in the WCAG success criteria (W3C, 2013). The WAI initiative have adapted some of the WCAG guidelines, for elderly users. These are organized by the following categories: low cognition, reduced vision, low dexterity and hearing impairments. By making the website confirm to these guidelines, we aim to enhance usability for all elderly users (W3C, 2013). We will use some of these principles, presented below, to make sure that our site will be accessible to most users. This could make the application more accessible and usable (W3C, 2013).

2.5 Accessibility by size and zoom
For the dexterity and fine motoric problems, Plos & Buisine (2006) recommend to avoid small buttons. W3C (2013) recommends by following this principle, we will make the service accessible for seeing impaired and motor impaired users. We will also give other users an opportunity to zoom.
2.6 Readability by designing by high contrast and full colours

Arch et. al. (2010) recommend the use of high contrast and full colours for users with vision impairments. Plos & Buisine (2006) case study showed the same results. We will use full colours and high contrast at our site to ensure readability.

3. Case and Method

3.1 User centered design

In user centered design the focus is that the "users play a critical role in the design of easy-to-use products throughout the entire development process." (Asbrink & Beekhuyzen, 2003, p.2). The user centered design approach actively involves the users in the design process from the beginning to the end. Rogers, Sharp & Preece (2011) emphasises the importance of the users involvement by stating that the “user knows best and is the only guide to the designer; the designer's role is to translate the users' needs and goals into a design solution” (Rogers, Sharp & Preece, 2011, p.320).

User centered design is practical by involving an iterative design and evaluation process, where the users needs and goals are investigated and made into design requirements. These requirements are tested with the users and reevaluated throughout the entire design process.

The approach is also conceptual by using a design model and user centered design principles (Asbrink & Beekhuyzen, 2003). The design principles frequently used are visibility, consistency, feedback, affordance and constraints. We will focus on visibility, consistency and affordance.

3.2 Synergizing guidelines and verifying these with users

Asbrink & Beekhuyzen (2003) shows using universal design guidelines and verifying these by a user centered design process, could enhance usability for a wide user group. By using the universal design principles for accessibility in a user centered approach, we hope to adapt the guidelines and empirical results into our design, and validate them by testing our prototype with users.
We will verify that the first prototype is developed according to accessibility guidelines by applying the principles presented above in our prototype. We will verify that the design are adapted to our users by conducting usability tests. This will confirm which accessibility and usability needs are present, and which aspects we need to redesign. By doing this, we hope to make the final site work well for our users.

![Diagram](image)

Figure 1: Our user centered design process with interview, analysis, prototyping and user testing.

To focus on universal design in interface development it requires an understanding of the user and the users situation. To gain such knowledge, we adopted a user centered design approach, aiming to develop a product that works efficiently for the average user and users with impairments. The universal design approach and user centred design approach share the aim of making products with improved usability. Astbrink & Beekhuyzen (2003) argues that "to achieve synergies between the two approaches is challenging but can produce rewards in the way products are evolved and made more desirable through good design practices."(Astbrink & Beekhuyzen, 2003, p.1).

### 3.3 Advantages by using interviews and user tests

The advantages of doing interviews and individual user tests are the one-to-one contact with the users. This ensures that all user opinions included in the study are considered. There are no other users that potentially could influence their opinions. The results also remained untouched by difference in social status.
3.4 Interactive prototypes

We made a high fidelity prototypes for the test session. These were made by using the prototyping program Axure. This program makes it possible to view and interact with the prototypes on all mobile phones by sending an e-mail. The realism in the test sessions could potentially make it easier for users to give appropriate feedback.

3.5 Analysis

We did an initial analysis of the potential user group, their needs and their average technological abilities. By doing this, we gained knowledge of our user groups needs. This knowledge gave us information to recruit some representative seniors for testing and interviews. As we worked closely with the owner of the website, and had access to stakeholders and internal company documents, we gained a thorough understanding of the user group and customer pain points in the existing service.

3.6 Analysis of our user group

Age and gender

The target audience for the main site has been specified by the owner of the dating service to be single people above 50 years of age who seek a partner, new friends or traveling companions. In reality, the majority (47 %) of the members are between 60 and 70 years old, according to statistics provided by the site in December 2012. 30 % of the members are above 70 years of age, and the remaining 23 % are between 50 and 60 years old. The gender distribution among users shows a strong over-representation of the female gender (65 %), whereas the male members count for only 35 %.

Social stigmatization

The reason for the percentage of 50-60 year olds being so low, can be found in the fact that people in their 50’s do not consider themselves to be seniors. On the other hand, a questionnaire conducted by the owner of the dating service in autumn 2012 revealed that most users (72%) register themselves as members at multiple dating sites simultaneously when they are looking for a new partner, but probably not as paying members. This may indicate that stigma by using a website for seniors is not present when the motivation to find a partner is strong.
Prerequisites and computer skills
To be able to use the desktop version of the dating service, the users must have access to a computer connected to the Internet and a minimum level of computer skills. The mobile version will extend the requirements of the users prerequisites even further, in that they must have access to a mobile phone with touch screen, and that they know, or wish to learn, how to use a touch phone.

The target audience can generally be divided into two different segments of users, retired people and people who are still working. We believe the latter segment is probably more proficient users of computers and more interested in using new digital services because they are exposed to modern technology and new types of devices through their work and colleagues.

Age-related disabilities
Unfortunately we have no information or indications of which age-related problems or disabilities are the most prevalent among our target audience. Therefore we must assume that the age-related challenges within our target audience corresponds with those of the general age groups in the Norwegian society.

4. Results and findings

4.1 Results from user test 1
The initial user test was structured to insure that we got enough data to start the development of a high-fidelity prototype. We found it valuable to start of with a drawing session based on a relevant user situation. This ensured that we got input that was not primed by our specific questions. A result from this session is presented in figure nr 2. In the last phase we conducted a semistructured interview, this gave us information about crucial factors that we had identified in a group meeting with the stakeholder. The result from the first user test gave us a good starting point for the development of the prototype based on the finding presented in table 1.
<table>
<thead>
<tr>
<th>Wanted by</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wanted by all users</td>
<td>● Search for users&lt;br&gt;● Read and send messages&lt;br&gt;● Be notified of new messages&lt;br&gt;● See new members who have registered</td>
</tr>
<tr>
<td>Users are positive or not quite sure</td>
<td>● Send wink / blunk&lt;br&gt;● See who has visited my profile</td>
</tr>
<tr>
<td>Both positive and negative feedback</td>
<td>● Registration&lt;br&gt;● Blog / discussion boards / live feed / chat&lt;br&gt;● Be notified when somebody has visited my profile&lt;br&gt;● Edit profile / add pictures</td>
</tr>
<tr>
<td>Not wanted by any users</td>
<td>● Information / FAQ / customer support</td>
</tr>
</tbody>
</table>

Table 1: Results from user test 1. The table describes what functionality the user wants.

Figure 2: Drawings from user test 1. The drawing shows that the users wants large pictures and limited text on each screen.
4.2 Design choices for the high fidelity prototype

All or some of the users agreed on functionality presented in the list below. We analyzed the recommended functionality choices, compared them to the market plan and other mobile dating services. Then we chose the following functionality:

- Search for users
- Read and send messages
- Be notified of new messages
- See new members who have registered
- Send wink
- See who has visited my profile
- Add picture

4.3 Interactive prototypes tested at the users mobile phones

Doing user testing with the high fidelity prototypes, provided us with information about what functionality to keep, what to remove and what to change. The users tested the interactive, prototype presented at their mobile phones. This made the test session somehow realistic for our users. Some screenshots from the prototypes are presented below.
Figure 3: Six of the high fidelity prototypes we used for user testing.
4.4 Results from user test 2

The results from user test 2 helped us prioritize between the two front pages. The users' opinions and usage of the prototype, provided us with information presented in the table below. The user tests provided us with the following information about what aspects to keep and what to change before making the final mobile site.

<table>
<thead>
<tr>
<th>Function / detail</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log in</td>
<td>• The login description at the top was misinterpreted as the “Log in” button.</td>
</tr>
<tr>
<td></td>
<td>• It is desirable with a “remember me” function.</td>
</tr>
<tr>
<td>Menu - horizontal og buttons</td>
<td>• Good size and straightforward</td>
</tr>
<tr>
<td>Size of text and buttons</td>
<td>• The “Back” button could be larger</td>
</tr>
<tr>
<td></td>
<td>• The size of the text on other members’ profile could be larger</td>
</tr>
<tr>
<td>Colors</td>
<td>• More colours on the horizontal “Main Menu”</td>
</tr>
<tr>
<td>Usability</td>
<td>• Easy to use</td>
</tr>
<tr>
<td>Navigation / interaction</td>
<td>• Easy to navigate, but could have a button to the “Main Menu” from all screens</td>
</tr>
<tr>
<td>Interface / location of elements</td>
<td>• The “Back” button could be placed closer so it easier accessibly for the thumb, in the lower-right corner of the phone.</td>
</tr>
<tr>
<td></td>
<td>• Some buttons was placed too close to each other</td>
</tr>
<tr>
<td>Problems / challenges</td>
<td>• The login screen, and the “back” button was difficult to use</td>
</tr>
<tr>
<td>Anything missing?</td>
<td>• More colours and a bit more information on the profile page.</td>
</tr>
</tbody>
</table>

Table 3: Results from user test 2.
5. Discussion

5.1 Challenges in designing applications for elderly

Plenty of research has been done on elderly and how they experience and are able to interact with new technology, and there are different opinions on the elderly’s ability and motivation for using advanced technology. Pfaff (2010) describes the importance of mobile phones and that it is many people’s main means of communication. However, Roupa, et al. (2010) states that many struggle to keep up with new technology. Elderly often face several difficulties derived from different contributing factors, such as demographic characteristics such as low income and low education, physical disabilities, lack of incentives and lack of appropriate training.

5.2 A diverse user group

However, Plaza (2011) stress that even though many consider elderly to be “non technological persons”, people that introduce technological advancements to seniors, should not design based purely on this stereotype. Plaza (2011) argues that due to the recent increase in use of mobile phones by elderly, proves that elderly in fact are welcoming new technology. Their adaption for technology shows that they see the benefit in using it, and shows that they are willing to learn. Larsen from Seniornett, described in an interview 14 November 2013, that seniors enjoy new technology and are eager to learn, but only if they see a clear benefit from what they are doing. This is consistent with Oppenauerer (2009), who argues that the perceived benefit of technology is having a strong impact on the likelihood of its use for tasks. Perceived benefit can be the goal of enhancing communication, and mastering technology to achieve self efficacy. Based on this, Oppenauerer (2009) recommends having early user involvement to reveal what the perceived benefits are early in the design process. Awareness of benefits of the technology can be more important than the know-how required using the technology.

5.3 Positive towards mobile phone usage

Consequently, we involved users from the early start of the project. We found that users perceived benefits from the mobile application, both in terms of enhancing communication, avoiding boredom, and also to learn how to use mobile applications. This agrees with Castells (2001), who explains that technology may result in social exclusion and inequality since cyberspace is increasingly turning into a social arena. It is not surprising that many elderly would
like to develop technical skills to in order to be part of the social arena.

5.4 Difficult to include users in the initial user test

We ran user centered design sessions opposed to focus groups as suggested by Oppenaurer (2009), in order to reveal design expectations in addition to perceived benefits. We found that including users in the first initial user test is difficult as some of the test subjects were struggling to complete the tasks that were required of them. They simply did not know where to begin, where to draw or what to draw. They would yield to their computer expertise and suggest designs that matched their understanding of their home computer. We realised that using a user centered design can be challenging when the users are not familiar with the technology that they are expected to help design.

5.5 Useful to include users in deciding functionality

However, all test subjects showed a keen interest in learning and when provided with some guidelines and hints, they were good critics and had strong opinions about what functions that needed to be included in the mobile application. If the application contained the required functionality and had good usability, all the test subjects, including the less tech savvy, agreed that they would enjoy using the mobile application.

5.6 Focus on the users experience

This project has taught us that it is challenging to designers to develop a mobile site for the elderly, as there is a fine line between what is considered contradicting and too simplistic, to what is considered good usability and good design. A growing number of older adults possess mobile phones, but the extend of how it is integrated into the person’s life varies greatly (Hardill & Olphert, 2012). According to Larsen from Seniornett, the level of technical skills is not necessarily directly related to age. We found that one of the 80 year old women in our user test possessed better technical skills that one of the other users at age 57. By using universal design principles, our challenge has been to develop something that all users can enjoy, also the ones that are more technological advanced.

After doing the user test and combining the results with findings from research, we found that the following needs should be catered for when designing mobile devices for seniors.
5.7 Limited functionality
According to Kane, et al (2009) people with disabilities often use a variety of adaptation strategies to overcome mobile device accessibility problems, including memorizing device functions, customizing their devices, and using multiple devices in concert to overcome the limitations of a single device. These findings corresponds well with our test subjects, as one of them used a Nokia phone in addition to a Smartphone, to overcome the perceived limitations of the smartphone. The user test revealed that all the test-subjects perceived similar functionality to be the most important. By only including this functionality, and excluding the rest, we assured the the mobile application of 50PlussTreffen will be simplistic and allows for its users to create mental models on how to use the application.

5.8 Consistent functionality
Seniors often memorize buttons and functionality, and to avoid seniors creating inaccurate mental models on how to return to a familiar state, buttons placed in one particular area should therefore only have one purpose (Kane et al., 2009). This is also to focus on the design principle of consistency. Based on this we placed the back button at the top left corner of the screen, where it would always redirect the user to the previous visited screen. As described in the next paragraph, the second user test revealed that this functionality were considered confusing by users.

5.9 Positioning of buttons
One of the test subjects with motoric problems, gave feedback on where to place different buttons. She claimed that the most important buttons should be placed in the lower right corner of the phone, so that the thumb could access it easily when holding the phone in the right hand. In the second user test, two of the test subjects experienced problems using the back- button at the top left corner of the screen. They described that it was hard to reach, too small and positioned too closely to the other buttons, so that they on several occasions pressed the wrong button.

They also expressed that their mental model of the application was compromised due to the back button. Although this button consistently took them back to the previously used screen, this screen would be different each time. The users expressed a need for a consistent button that
would always take them back to the main menu, preferably placed at the bottom right of all screens.

5.10 Naming the buttons
Both user test revealed many different suggestions for naming the buttons in the app. The older respondents suggested words such as letters instead of message, while the younger picked more modern words. After the first user test we choose words that would correspond with naming convention of similar systems on desktop and apps, such as message and member, that we believed would be recognizable by the older respondents. After the second user test we found that all test subjects understood what all the functionality was meant for. They experienced little or no problems in navigating the app based on the naming-convention.

5.11 Prioritizing functionality at a limited screen size
The users needs for big buttons placed in a consistent way during the whole user sequence, conflicted with the designers need to reveal all functionality at the site. Therefore, the need for prioritizing functionality were revealed. The designers asked the users to prioritize at the initial user test. The users all agreed in the primary functionality, such as messages and look at other users. These were used in the final interface.

5.12 The balance between user input and theoretically guidelines
Asbrink & Beekhuyzen (2003) represented the challenge of synergizing user centered design and universal design. The designer team also met challenges balancing the theoretical guidelines with the information from the user tests. One example of this is the users preferences regarding having several functionality presented. This conflicted with the need to keep the user interface simple, to remain accessibility. We tried to balance the two needs at the final interface. Potential further work, could be testing the final product with users with need for accessibility adaptations.

5.13 Designing for Mobility
When moving from the web to a mobile application designers must design for mobility. When the users are mobile they will not have many of the props around them to support what they are
doing, such as notes on a desk, and they are likely to be in an environment that are not ideal for concentrating, and the environment will drastically change as the users moves (Dunlop & Brewster, 2002).

5.14 Designing for users multitasking
Dunlop & Brewster (2002) explains that users on mobile applications are multitasking at levels unfamiliar to most desktop users. The design therefore needs to be adjusted for task interruptions, and simplicity so that users will avoid getting confused.

6. Remaining work
One limitation in our prototype is that we have not implemented feedback functionality. It is important that the user gets feedback. That would be an important next step in the future development of the prototype.

We chose to interview and test prototypes with users. To ensure that the criterias for accessibility were approved by all potential users, and to make the results reliable in a statistical manner, we could also have included more user tests. This could serve to enhance and validate that the final version is accessible and motivating to use to most potential users.

7. Conclusion
There is potential for empowering seniors to fulfill their social needs by enabling them to access a social network. In addition to socialize seniors, the mobile version of a dating website can also motivate them to enhance their technical skills and become digitalized citizens.

By adapting accessibility guidelines to interactive prototypes, we validated what functionality to adapt in our prototype. The initial user testing, presented the designers with several challenges. The main challenge was to reveal and analyze the users initial recommendations. The next one was to prioritize what functionality that both appealed to most users, designers and confirmed to accessibility guidelines. The last challenges were adapting these analysis into an interactive prototype, and to find a sufficient number of representative users for the final test session.
Although we considered the user centered approach challenging, it also provided us with real world information from potential users of the website. By using the feedback concerning functionality, accessibility and usability, we aim to make the prototype for the mobile version of 50PlussTreffen useful, accessible and motivating for potential users.
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