BACHELOR THESIS

Social loneliness amongst older adults

Creating an overview of local social activities to decrease loneliness.

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Abstract

This research is about designing and evaluating an overview of local social activities for older adults. The purpose is to benefit the reduction of loneliness in the long term. Loneliness among older adults is a serious problem. A big part of the population of older adults aged 65 or older report to feel lonely. Loneliness is very subjective and can not be predicted. Older adults do have an increased risk of feeling lonely due to age-related aspects such as a decreased mobility, grief and many other factors. The methods used in this research are semi-structured interviews, observation, a questionnaire and unstructured conversations. From these methods, it became apparent that older adults can learn to use technology. Therefore, a website is a suitable platform. The prototype is evaluated among the target audience three times, to ensure all essential elements are present on the screens. The finished prototype can serve as a proven starting point to develop a functioning website. From here, further steps can be taken to bring more people together and give older adults more control over their social activity.

Acknowledgement

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Finally, I want to thank Buurtzorg, who welcomed me into their company to conduct a couple of interviews, who have helped me to give another perspective on loneliness.

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1. Introduction

Many older adults in our society live alone. Due to a decreasing mobility or the passing away of friends and family, they have an increased risk to be socially isolated and therefore risk feeling lonely. Feeling lonely can have a tremendous impact on the quality of life [1]. Loneliness can, amongst others, cause depression, poor physical health and mortality [2]. Due to these health risks loneliness is an important topic in society.
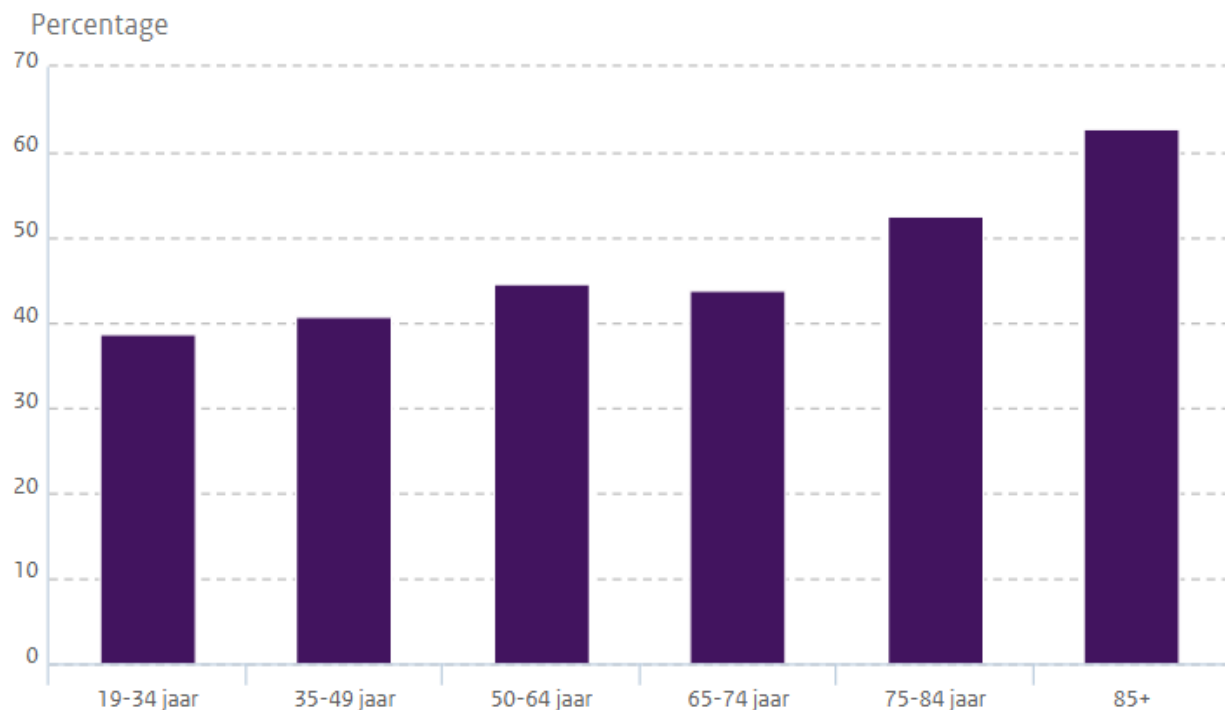
Figure 1: Percentage of older adults that feel lonely in the Netherlands in 2016 [3]

Older adults in our society feel lonely more often compared to other age groups and therefore it has been an important topic in research and a prominent problem in society. Gierveld concluded from the findings of around 40 surveys that between 20 and 30 percent of adults aged 65 to 79 and between 40 and 50 percent of adults aged over 80 years report feeling lonely "often" [4]. In the Netherlands this percentage is higher, as can be seen in figure 1, which shows collected data the Netherlands in 2016 from 457 thousand respondents. The bar chart in Figure 1 visualizes the percentage of loneliness.

While loneliness occurs throughout all ages in society [5], older adults have specific factors that increase the risk of feeling lonely. These factors include among others: widowhood, lifelong singlehood [6], the impact of bereavement, traumatic life experiences [1], decreased mobility and chronic illness. Due to the subjectivity of feeling lonely it is impossible to accurately predict whether someone feels lonely but based on the circumstances one can identify whether a person is at risk of being lonely.

There are two types of loneliness: social loneliness and emotional loneliness. A feeling of social loneliness is perceived when there is a lack in one's social network. Emotional loneliness is experienced when there is a lack of an attachment figure such as a husband or wife. Next to these two definitions, it is important to understand the difference between perceived social isolation and objective social isolation. Due to the subjective nature of loneliness, just being alone (objective social isolation) is not necessarily a bad thing. Spending time alone is often appreciated and viewed as a relaxing. On the other side there is perceived social isolation, which is synonymous to feeling lonely and can cause much harm when experienced over longer periods of time.

Objective social isolation alone is not enough to cause loneliness, people must perceive themselves as lonely for loneliness to occur [5]. Luhmann and Hawkley state that loneliness is characterized by a perceived lack of control over one's social life, having no control over the quantity and especially the quality of a person's social activity [7].

There is a common agreement in the scientific community about the following three points concerning loneliness:
1) It is a result from a perceived deficiency in a person's social relationships.
2) It is a subjective experience not synonymous to social isolation
3) It is unpleasant and distressing

The objective of this thesis is to provide an overview of activities older adults could attend in order to give them more control over their social life. For this thesis the target audience is older adults with an age of 65 years or more that live alone and independent. The reason for choosing this target audience is their objective social isolation. While not synonymous to perceived social isolation or feeling lonely, this target audience is at an increased risk of feeling lonely compared to older adults that live in care centers or with a partner.

Last year, Mirel Nijhuis graduated at Ecare Innovatie [8], conducting research on how technology can help reduce loneliness in older adults. While her research took a different angle, namely the application of Google home in reducing loneliness, her research can be viewed as prior research on this topic. In her recommendations, she noted that there is no clear overview of activities for older adults in their neighbourhood. This finding could be a strong point of improvement concerning the social activity of older adults.

The main research question is: **Is it possible to develop an overview of local social activities to benefit the reduction of social loneliness amongst lonely older adults?**

To answer this primary research question, there are a couple of subordinate questions. These questions are:

1) **Is there a demand amongst lonely older adults for an overview of social activities that they can attend?**
2) **Do lonely older adults currently know how to find and attend a local social event?**
3) **What is the most effective way of presenting, reaching and distributing an overview of social activities amongst older adults that live alone?**
4) **Is it possible to personalize the selection of activities in an overviewed aimed at reducing the feeling of loneliness based on the preferences and circumstances of an older adult?**

The report will have the following structure. First, chapter 2 will cover the state of the art, consisting of a literature review and an overview of current activities and activity overviews for older adults. Chapter 3 will describe the methods used to obtain information about the target audience, after which chapter 4 will cover all the results. In chapter 5, called "Ideation", the choices for the first prototype are thoroughly explained. In chapter 6 the prototype will be evaluated two times, and finally a survey will be spread. The last section of chapter 6 will cover the results of the survey. The 7th chapter will answer the research question and is called "Conclusion". The last chapter is called "Discussion and recommendations" where the entire research is critically evaluated and discussed, followed by a list of recommendations for future research.

2. State of the Art

2.1 Literature review

The first step for the state of the art for this thesis is to dive into the background literature to unearth crucial background concerning loneliness. It is important to know what is already done, and what is known about loneliness. Therefore, this section will cover the definition of loneliness, age-related factors affecting loneliness and finally some potential health implications that may result from feeling lonely. This knowledge can then be used as a basis for the rest of the project.

The definition of loneliness

Loneliness and being alone are different and should not be intertwined. Luhmann and Hawkley claim that loneliness is not a synonym of being alone [7]. This statement is supported by West, Kellner and Moore-West who add that one must clearly distinguish between spending time alone and circumstances that induce a feeling of loneliness [5]. Being or living alone is defined as objective social isolation, which is different from perceived social isolation as it may not be distressing [7]. According to Newall et al. and Schulz, the definition can be described as "Loneliness is characterized by a perceived lack of control over the quantity and especially the quality of one's social activity" [9][10]. Loneliness is subjective and not equal to being alone, the next step is to define loneliness.

There are many different definitions of loneliness that all share a common ground. Pinquart defines loneliness as a 'perceived absence of satisfying social relationships, accompanied by symptoms of psychological distress that are related to the perceived absence' (p. 31) [11]. This coincides with the definition stated in the paper from West, Kellner and Moore-West: 'Loneliness is the unpleasant experience that occurs when a person's network of social relations is deficient in some important way, either quantitatively or qualitatively.' (p. 351)[5]. They use the definition 'the exceedingly unpleasant and driving experience connected with inadequate discharge of the need for human intimacy, for interpersonal intimacy.' to describe loneliness. Finally, Cacioppo, Capitanio and Caccioppo state that "Loneliness is a complex set of feelings encompassing reactions to unfulfilled intimate and social needs. Although transient for some individuals, loneliness can be a chronic state for others." (p. 143) [12]. With these definitions, loneliness could be defined as: *The feeling of a deficient social network or lack of interpersonal intimacy caused by a perceived lack of control over one's quantitative and qualitative social relationships and activities.*

Age-related causes for loneliness

Loneliness is a subjective matter with its causes not carved in stone, but there are a couple of age-related factors that increase a person's risk of feeling lonely. According to von Soest, Luhmann, Hansen and Gerstorf it is pivotal to know the causes of loneliness, but due to its

subjective nature it depends on how the phenomenon is assessed [2]. Victor et al. identified a list of five sets of factors that are consistently associated with the feeling of loneliness [13].

- Socio-demographic attributes (living alone, being female, not having any surviving children, living arrangements, being aged 75 or more years)
- Material circumstances (poverty, limited education and low income)
- Health resources (disability, self-assessed health, mental health, cognitive function, anxiety and depression)
- Social resources (size of social network, isolation, time alone and presence of a confident)
- Life events (recent bereavement and admission of a relative/spouse into care)

West, Kellner and Moore-West state that, in contradiction to what is said in the introduction, older adults are not more lonely than other age groups [5]. There are some age-related factors that influence the feeling of loneliness. According to Gierveld, the most salient determinants of loneliness amongst older adults and the oldest old are the loss of a partner and deteriorating health [4]. Pettigrew and Roberts state that loneliness may be perceived as an inevitable part of the aging process [14]. For this statement they mention "*the increasing social isolation resulting from deteriorating mobility, sight, and hearing, the gradual passing away of friends, and family members being too busy to spend much time with their ageing relatives.*" (p.304). Another important factor that may influence perceived social isolation is the marital status [5]-, [12]. West, Kellner and Moore-West state that there is evidence that the married are less susceptible to self-reported loneliness compared to the unmarried [5]. Beal found evidence that women report more loneliness compared to men of similar age [6]. From all these proven aspects the most important factors that influence loneliness could be recent bereavement, deteriorating health and marital status.

Potential health problems

Loneliness can cause serious health implications. Where some people describe possible health implications as "an increased vulnerability to health problems" [15] or "poor physical health" [2], others state a concrete list of possibilities. Beal lists an increased risk of a heart condition, depression and an increased risk for suicide [6]. Von Soest et al. names depression and mortality [2]. Pettigrew and Roberts also state depression, alcohol abuse and suicide as well as actual and perceived ill-health, dietary inadequacies and personality disorders [14]. Jones, Rose and Russell listed substance abuse, suicide, anxiety and vulnerability to health problems [16]. Taking all the lists into account, the most important health risks that can be a result of loneliness are depression, suicide and alcohol abuse with an overall increased vulnerability to illness as a side note.

2.2 Existing overviews of activities

To know what requirements come with an overview of activities aimed at older adults, it is crucial to look at interventions that are already in place. This subsection will provide an overview with some of the most important overviews of activities for older adults that are currently available.

2.2.1 De Zonnebloem

While there is no order to this list, the first one is "De Zonnebloem" [17], a national initiative aimed at people with a handicap. The target audience is not bound by age, and one part of their target users are lonely older adults. Using an interface, shown in figure 2, where one can find the closest division based on postal code, the user is able to obtain a phone number he or she can call for more information. The upside of this method is that it is extremely personal. The volunteer can help the older adult in the best way they see fit. Another advantage is that the older adult can express their preference and the volunteer will know exactly what is going on in the neighbourhood. This way the best advice possible can be given. Downsides of this system are a lack of overview of potential activities as well as a higher boundary as people need to take a step to call someone.

Figure 2: De zonnebloem interface

2.2.2 Het Nationaal Ouderenfonds

The second overview available at "Het Nationaal Ouderenfonds" which translates to "The National Foundation for the Elderly" is a Dutch charity aimed at older adults [18]. Their overview is tough to find when navigating the website but shows an array of possibilities for lonely older adults. The first box is called "Uitjes" which translates to "Trips", and it takes you to a slow webpage with shows a selection of trips throughout the country. The selection is modest and therefore not recommendable to local older adults. Especially as transportation is a known problem, one can does not expect older adults to come to Amsterdam for a canal tour.

Furthermore, there is no possibility to filter the website based on location. Therefore, the older adults need to scan through a list of possibilities that are not accessible for them due to travel distance.
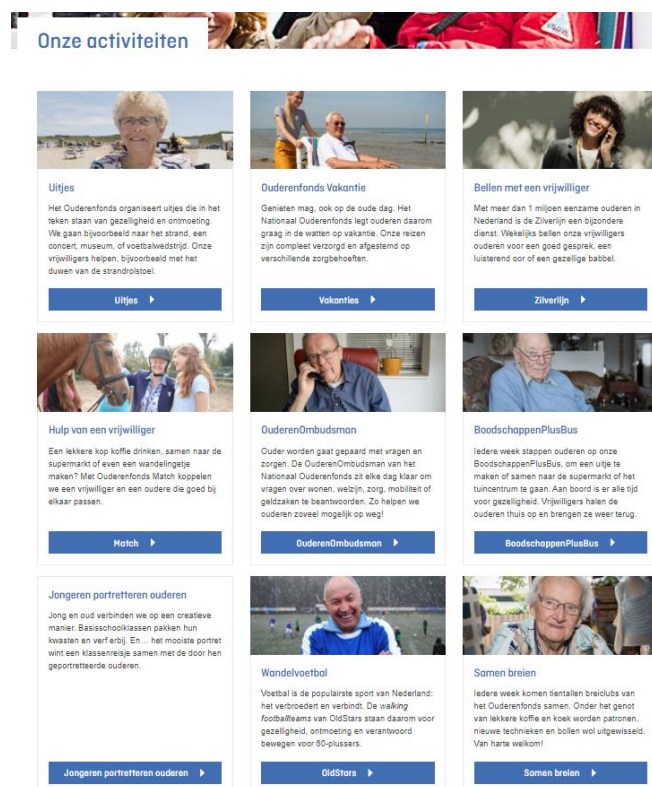
Figure 3: The National Foundation for the Elderly interface

The overview, shown in Figure 3, has potential but lacks a way to filter by location and therefore is showing options that are not viable for most of the users. An example of this is a culture trip where participants go to Hilversum for a tour at "beeld en geluid" to watch nostalgic television shows. While interesting as an activity, due to transportation this might not be accessible for older adults living in Enschede as they may not have transportation to Hilversum.

2.2.3 Een Tegen Eenzaamheid

The website of the national organization called "Één Tegen Eenzaamheid" has a webpage dedicated to a big list of different initiatives older adults could read through in order to find activities they could attend [19]. The overview can be seen in figure 4. There is a search function to filter on location, but at the time this site is accessed, it appears to be broken. There are interesting activities and initiatives within the list, but they are hidden between obsolete initiatives that are relevant to just a small number of people. An example is forest walks older adults could attend. While the initiative shows as "throughout the country" the closest organized walk to Enschede would be in Deventer ("wandelingen op een rij"). This is not an example of a local event.

Next to this, the initiatives overview on this webpage also includes other things than activities. Examples are a block dedicated to an app to meet other people over the age of 50 called "Klup". While this indeed is an initiative, it is not an activity older adults can attend. Therefore, when looking for activities, the user must look past a lot of non-related initiatives.
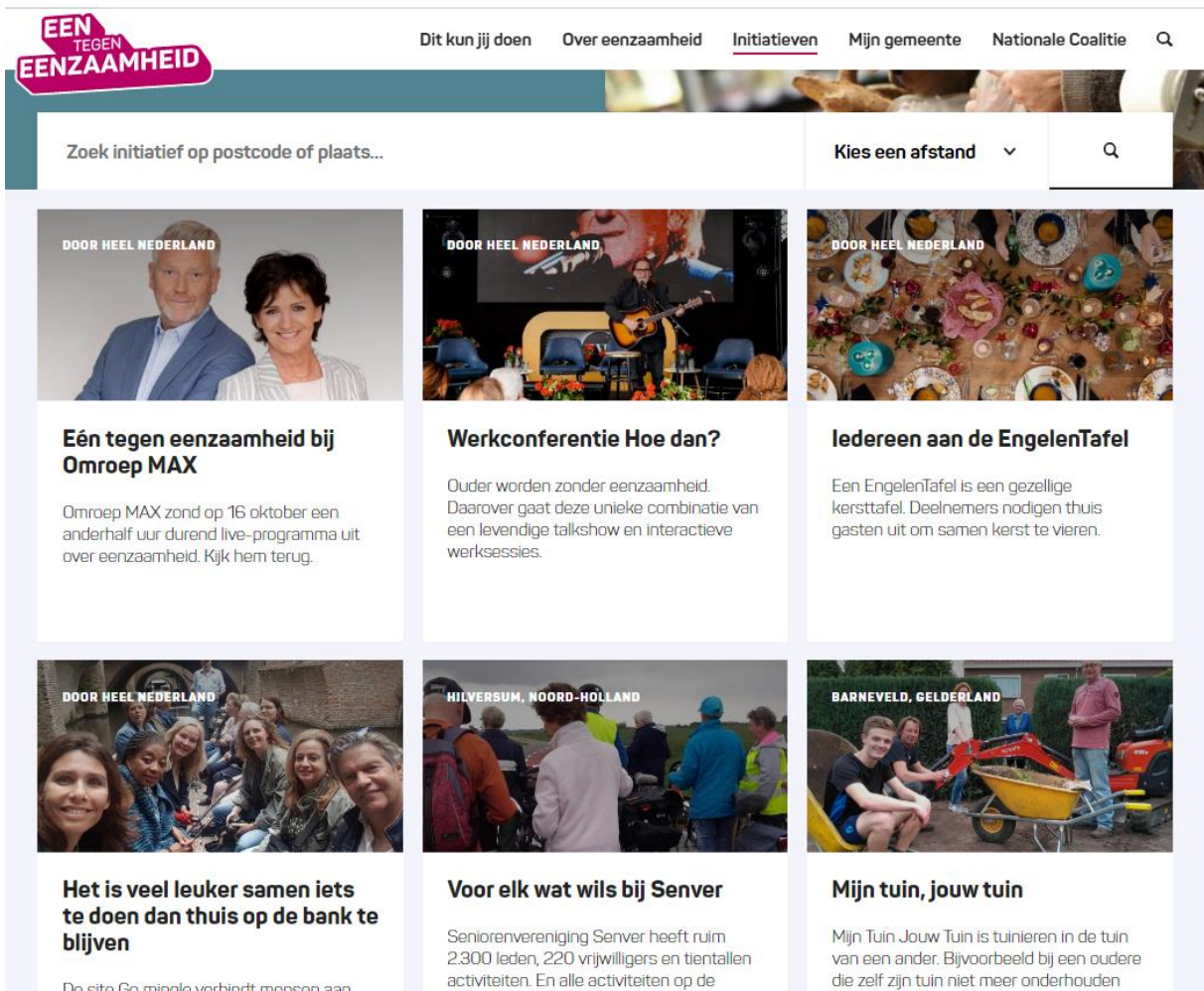
Figure 4: Een tegen eenzaamheid interface

2.3 Possible Activities for Older Adults

All the overviews provide different activities and ways for older adults to connect with each other. This section will give an overview of some of the possible activities older adults can attend. This is relevant to know as it is important to understand what activities already available and what activities older adults are like to do. Using this information, it may be possible to see what activities have to be included in a future overview.

2.4.1 De Zonnebloem

From the overview of the Zonnebloem, you are not able to immediately see what activities they offer. You must call the closest department for more information. The closest one to the University of Twente is the regional department "Enschede". They provide amongst other things volunteers that visit the homes of older adults to drink a cup of coffee. There are also multiple divisions throughout the Netherlands that provide activities for older adults. Examples are a walk through the forest, a lunch, bingo or a visit to the garden center.

2.4.2 Nationaal Ouderenfonds

Knitting together
Knitting is more fun when you do it together, and therefore the target audience of knitting together is everyone [20]. There are more than 100 knitting clubs throughout the Netherlands. There is also one in Enschede, which comes together every week on tuesday from 10.00 to 12.00.

Schrijfmaatje
Older adults can enroll themselves to become a "schrijfmaatje" or in English: penpal [21]. The ouderenfonds foundation will make a match between the older adults and other people who have enrolled. The match is facilitated using requests visible to all people enrolled. When interested, one can respond to such a request. For the graduation thesis, but also to help older adults, I have enrolled myself for this program to see what it is like. While the graduation thesis we have exchanged multiple long emails in which we got to know each other better. A service like this really is a valuable addition to people's lives.

De Zilverlijn
De Zilverlijn or translated: the silverline is a calling service offered by the ouderenfonds foundation where older adults are called on a weekly basis by a volunteer to have a conversation [22]. This service is a way to have a private conversation from the residence of the older adults, which makes it accessible to people with decreased mobility.

Old stars walking football
Also, a part of the ouderenfonds foundation is walking football. On the website of Old Stars there are many more different walking sports especially tailored for older adults. Next to being more active, the associations provide social activity with other people. Examples of differents sports that one is able to play are basketball, football, handball, hockey, korfball, rugby, table tennis and tennis.

Old stars is increasing in popularity and has multiple options for participants to join throughout Twente [23]. This can be seen below in figure 5, where all the joined sport associations are located on a map.
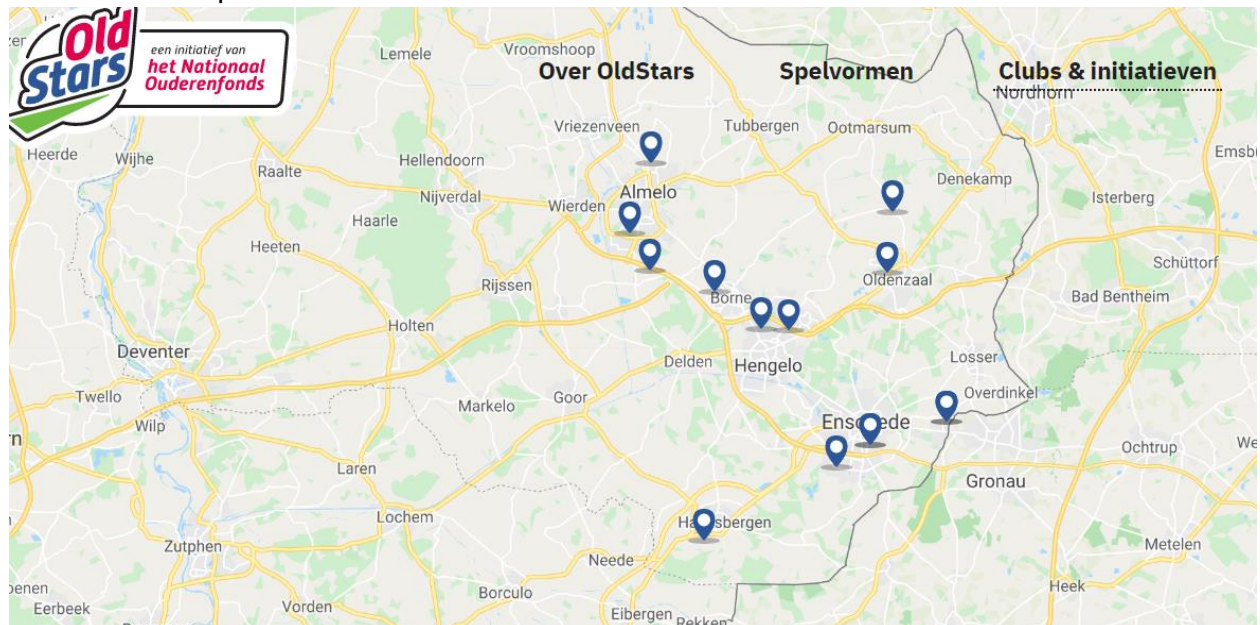
Figure 5: Old stars locations

An example of Old Stars increasing in popularity is a news article published on "Hallo Losser" which provides news in and around the municipality of Losser [24]. On the 29th of October 2019 there was a Walking Football kick-off session where everyone interested could attend. Initiatives like this promote both health and social life of older adults.

Other activities organized by "Nationaal Ouderenfonds"
There are many more activities throughout the country that are available to adults aged 55 years and older. Next to the initial overview they also have a secondary webpage where you can scroll through activities. You can sort them by region and type of activities. Most activities require the participant to pay, and there are not many activities available. A screenshot of the webpage is added below.
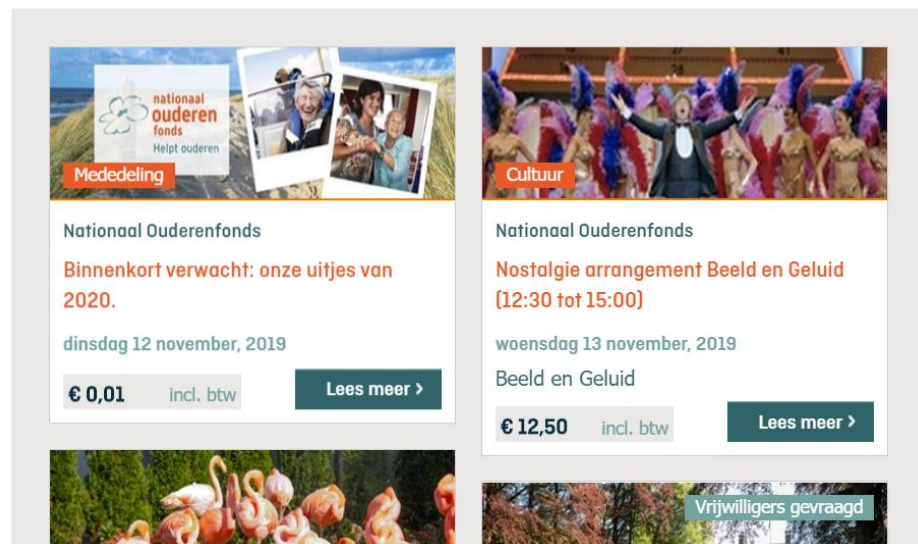
Figure 6: an overview of the website [25]

On this website there are at the time of accessing 5 activities for people living in Overijssel. All five activities are only available to customers of the ASN Bank [26]. Three of the activities are called "ASN Sallandse Heuvelrug, treintocht en florawandeling" and are available on three different dates. The last two activities are called "ASN Weerribben - Ossenzijl" also available on two seperate dates. While these activities might be enjoyable for older adults, they can not be considered local activities.

2.4.3 Resto van Harte

Resto van Harte is a restaurant initiative in the Netherlands with many joined restaurants [27]. There are at least 59 locations throughout the Netherlands. There is one restaurant in Enschede where people of all ages can join for dinner every thursday. The cost for this meal is 7 euros. It is a great way to meet new people and is open to everyone.

2.4.5 Liberein

Liberein [28] is a care institution that provides care for older adults. They are located in Glanerbrug, a small place to the east of Enschede. There are a lot of activities organized by Liberein, which they are actively promoting. The activities are not only aimed at residence of Liberein, but also people living independently. With these activities they are not only reducing loneliness amongst their patients but also for older adults that are living independently alone. Liberein is a good example of a care home that is also trying to improve and involve other

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people living in the municipalities. Their activities could also be included in an overview of local activities.

2.4.6 Trivium Meulenbelt Zorg (TMZ)

TMZ [29] organises a lot of activities for their residents. The activities are not accessible for older adults that are not staying at TMZ. Example of activities organized by TMZ are:
- Bus tours
- Drinking Coffee
- Bingo
- Knitting
- Gentleman mornings
- Singing mornings
- Celebrating Sinterklaas and Christmas
- There is a daycare located near TMZ, and periodically groups of kids visit the older adults.
- On national animal day there were a lot of animals present at TMZ for the older adults.

Every month there is a new schedule for activities that is spread through posters and folders. Each department has its own activity-employee responsible for distributing the activities and making sure everyone knows about these activities. While the activities are not aimed at people living independently, they are good examples of activities that are enjoyable for older adults. These could pose as an example when looking at what kind of activities should be available when creating an overview.

2.4.7 Go Mingle

Go Mingle [30] is a website started by Neiske Ritsma and is aimed at people of all ages. They are invited to join existing activities or create and organise their own. They charge a fee of 24 euros a year or 4 euros per month. An important quote by the founder is "When you say, "I'm a website for lonely people", nobody signs up" [31]. This is important to keep in mind when creating an overview of activities. It should not be called an overview "for lonely people" but rather just "an overview of activities".

2.4.8 Klup App

Using the application called "Klup" you can find each other online and meet in real life [32]. This is the goal of Klup. The target audience is people older than 50, and the price is 40 euros per year or 5 euros per month. They claim to organize 130 activities per week. Notable is their business model: subscription based with a possibility to become a "plus" member which unlocks unlimited friend requests and possibly other features. It appears to have a "tinder-like" functionality as well where you can scroll to all other app members close to you.

3. Methods and Techniques

This section describes the different methods that are used to obtain information about the target audience, which are older adults older than 65. The methods are semi-structured expert interviews, an online survey and a focus group session. Throughout this chapter all choices made concerning these three methods are explained.

3.1 Interviews

3.1.1 Older adults

To obtain an insight into the worldview of the older adults, interviews will be conducted. These interviews will provide information about the current behaviour, habits and choices that older adults make concerning their social life and social activities. The goal of these interviews is to obtain insight on user requirements and hopefully elicit user requirements and prototype specification for a potential overview. Furthermore, a survey will be created based on the interview results to be spread among a larger audience.

The interviews will be exploratory and will serve as an initial method to obtain key knowledge about the target user group. Keeping this in mind, from a fully structured, semi-structured and unstructured interview the most promising strategy is conducting semi-structured interviews. In a fully structured interview one must formulate all the questions beforehand. It is possible to use open questions, but the order of the questions is determined beforehand. Because it is not yet known what the views and opinions of the target user is like, it is impossible to structure all answers beforehand. Next to this, it is necessary to be able to ask (pre-formulated) follow-up questions to guide the interview. Because the interview is of exploratory nature, it would make sense to conduct an unstructured interview. However, this type of interview is more like a conversation where you let the interviewee talk about whatever they desire. To preserve the control of the conversation and keep the focus on the topic of interest, it is a must to be able to control the interview and steer the conversation back on track. Because of this reason, the interviews conducted are going to be semi-structured.

The next choice to be made is how to conduct an interview. In the past, a lot of interviews were conducted via telephone. Older adults are familiar with this technique, so choosing this medium for this thesis is a possibility. However, conducting an interview face to face allows the interviewer to observe the body language and facial expressions of the interviewee leading to more information. In addition, due to the delicate nature and a potential taboo concerning loneliness, being able to see how the interviewee reacts to the questions is highly desired. This additional information could allow the interviewer to ask further questions on a topic or possibly alter the formulation of a question. However, one could argue that conducting interviews via telephone preserves the interviewee's anonymity and he or she therefore might be more

forthcoming when answering questions about loneliness. Being able to read body language outweighs the anonymity provided by a telephone, so therefore all interviews will be conducted face to face when possible.

To make the interviewee feel comfortable with the interview, more delicate questions will be asked later in the interview. Examples of such questions include questions concerning loneliness. The interview will start with lighter questions for establishing trustworthiness and a connection with the interviewee. It is also important for the interviewer to keep the personality of the interviewee in mind and rephrase questions based on the perceived character of the interviewee.

Due to the potential taboo concerning loneliness, it is important to keep a potential prestige response bias into account. This bias occurs when a participant is trying to impress the interviewer by giving answers to questions of which the participant is convinced will increase his or her image.

The interviews will be conducted in the café of the public library in Hengelo. Ideally, the interviews would be conducted at the house of the older adults as this is a familiar and comfortable location. This is not always possible, and therefore the location of the library is chosen. The café provides a relaxed environment where one can conduct a conversation. Drinking a cup of coffee or tea is a possibility, which could make the participants feel more comfortable. Next to this, it is important that it is made clear that the opinion of the interviewee is highly valuable to the research and that they are the experts on the topic. Showing gratitude will promote honest and valuable input from the interviewee.

The interview questions that are going to be asked during the interview with older adults can be found in Appendix A.

To ensure proper interview analysis, all interviews will be summarized directly after it is conducted. Ad verbatim transcription of the interviews is not necessary for the purpose of this study. This only is necessary when analyzing protocols or other situations where aspects like the vocabulary, the order of the words or the length of the sentences would matter. To assist in analyzing the interviews, the interviewee is asked whether it is alright to record the interview. If allowed, the interviewer will start a recording of the audio of the interview.

3.1.2 Master student industrial design engineering Shannon Smit

Shannon Smit is a master student Industrial Design Engineering and she graduated at 's Heeren Loo [34] last year. 'S Heeren Loo is a company that aims to facilitate people with a mental handicap to live life the way they want. They have multiple houses where people with a mental handicap live together under the guidance of professionals. Innovation is important to the company, and they always work based on a problem of one of their clients. Using this innovation method, they have solved multiple problems to improve the quality of life of their clients.

She designed an activity overview for residents of the care facility and received an innovation award from the company for her project. Due to the overlap with this graduation thesis it is highly interesting to conduct an interview. Because of the lack of prior information this interview will be an unstructured interview.

The interview will take place in a canteen during lunch. Due to the informal location and the probable noise it will not be possible to record this interview. The goal of the interview is to learn what techniques she used to make sure the users will use her product in the long term. Does she have tips to apply to this project. Her answer will depend on what her project really is about.

3.1.3 Buurtzorg healthcare professionals

When designing a product or service for older adults, it is important to think about the role that healthcare professionals are going to play in it. When the target group is narrowed down to older adults that live alone, healthcare professionals and relatives are the people that are closest to them. The people closest to older adults are valuable for this project, as they can recommend an overview of local social activities to them. The healthcare professionals and relatives are a key factor in making the finished product on which this graduation project is working a success. When enough people know about the product, it is possible to achieve a top of mind position. This occurs when a given product or service is the very first option that comes to mind when one wants to join a social activity. A good example is ordering books. In the past local bookstores would immediately come to mind, and in recent years this has shifted to online retailers like Bol.com [36].

Due to the close connections of Ecare Innovatie, it is possible to interview health professionals in the short term. For this thesis it is important to interview them, because they stand close to the target user group. Furthermore, they may have different insights compared to the older adults. Reasons for this could be a taboo around loneliness, which causes older adults to give different answers. Another reason could be that healthcare professionals are less likely to fall for social desirability. Social desirability happens when an interviewee answers a question while trying to be completely forthcoming. A participant may provide an answer of which he or she believes it to be socially desirable or more acceptable rather than answering the truth. This bias will make the older adults answer what they think is the correct answer.

Because of these reasons it is important to ask the healthcare professionals about their impressions of their clients. Do they see that their clients are lonely? Do clients express a desire to attend activities? The exact questions that are going to be asked can be found in Appendix C.

Also here, the interview will be semi-structured. This allows the interviewer to ask (pre-structured) follow up questions to guide to interview and explore promising paths.

3.2 Surveys

3.2.1 Survey for older adults

A survey is a great way to verify the findings from an interview among a group of people. It is important to ask the right questions, otherwise it is possible to obtain wrong or incomplete information. Therefore, the questions in the survey will be based on the interview results.

The survey can be digital or on paper. Digital has the advantage that it is easier to analyse, as digital survey services like Google Forms [40] automatically create charts from the collected answers. A paper survey would suit the target audience more, as it is more intuitive to fill out for older adults. However, it would be timely and expensive to spread the paper survey by mail, and therefore a paper survey is not possible within the scope of this graduation project.

The final evaluation of the prototype will be conducted using a digital survey. Before the survey is created and distributed, two interviews will be held using the same strategy as described in chapter 3.2.1. The survey will be spread using the researcher's social network, and the survey will therefore be prone to convenience sampling. It is difficult to control the sampling of the survey, and therefore the results can be divided into several subsections using demographic questions. The most important question that will filter the target group from the rest of the respondents is the age of the respondent.

To analyse the survey results, Google Forms can create several graphs. The open questions that are going to be asked will be manually analysed by looking for recurring answers, new recommendations or other remarks that can add to the design process of the prototype.

4. Results

This part of the thesis will provide all the results from the various methods described previously. The structure is similar to chapter three, with the results ordered per method.

4.1 Interviews older adults

Two older adults have been interviewed to explore the needs and worldview of the elderly. The interviews served as an initial way to find out the needs and habits with the aim to find requirements that should be included in a potential overview. The interview has been recorded and roughly transcribed in Appendix F.

There were two participants for this interview. The first participant was a woman of 82 years old. She was short, had grey hair and used a walking cane to move from a to b. She had no problem hearing but does wear glasses. Her hobbies were driving in her car, gardening and baking her own bread every day. I would characterize her as a typical sweet grandma (although she had no kids) that still wanted to explore the world but her old age was slowly becoming a problem. She had to move to a small apartment where she could not maintain a garden anymore. She was glad she could still drive her car.
The second participant was a man who is 64 years old. He has been married in the past but got divorced and now lives with his girlfriend under a cohabitation contract. I would describe him as a kind, convervative man. He did have a smartphone but kept asking what profession I was going to practise after my study. His world is small and he is poorly educated. This was the reason that he does not like to write emails due to his poor language skills.

These participants were recruited by convenience after asking to a group of about 15 older adults who would be willing to sit down for a cup of coffee and an interview.

Next to the interviews various useful results have been obtained through assisting in a senior computer course as well as a technology walk-in hour where older adults could be assisted with technology-related problems. There are numerous relevant results that were pointed out by older adults as well as through careful observation.
- Older adults are extremely careful when it comes to cybersecurity. They pay close attention to all the websites they visit, what kind of emails they receive and what digital content they download. If they do not trust something they will not commit and will immediately leave, delete or remove whatever they feel necessary.
- There were various older adults that were learning how to use their computer. Through careful explanation, repetition and practise there was noticeable improvement in the use of their computers.
- Older adults trust software that is recognizable. When applications use a similar layout, it is more straightforward to use.
- The teacher of the course noted that older adults used to be more interested in learning about technology, but nowadays a lot of the older adults are forced to use computers

because of for example internet banking. This does mean that almost everyone has a basic understanding of technology and the use of internet.
- In using the file manager on laptops, a lot of older adults were demotivated by the large amount of options and features. There were numerous complaints about the complexity of a system. In addition, people fear getting lost on software when panels or menus suddenly disappear. This is also a reason why older adults are hesitant to freely navigate and explore all the features of a piece of software.
- An issue that is prominent among older adults using technology is that they click with their eyes. When they see a button or link, they want to click, they click with the mouse instead of first navigating the mouse pointer to hover the button. At first the teacher of the course explained this problem, but a couple of minutes later, one of the participants in the course did indeed click on a button without hovering it.
- There are older adults that are motivated to teach the use of modern technology to other older adults.

4.2 Interviews with Buurtzorg employees

Due to a different function of the professional's interviews compared to the beforehand expected expertise most questions initially prepared proved irrelevant. Instead of interviewing nurses from a team of Buurtzorg the interview was conducted with the team of nurses that assisted the buurtzorg teams via telephone. Whenever a Buurtzorg nurse was unable to answer certain questions they were able to call the headquarters for assistance.

From the conversation, there are several things that came up and were relevant for this project.
- Older adults in cities tend to be lonelier compared to smaller villages. This is because in villages the community is tighter and more involved. People generally look after each other more in smaller communities.
- Every client is different, and it is impossible to predict whether something will work beforehand when it comes to loneliness.
- Personal differences and issues play an important role in preference of activities. Someone can be blind, deaf, have walking difficulties, forgetful, or does have / does not have a family on which they could rely for social activity.
- There is a trend that society is expecting people to stay at home for longer periods of their life. While a lot of people assume living at your own house for prolonged years, it could be better for some people to move into a care home. This could be because of a higher social need or the inability to take proper care of themselves or their house.
- An observation made by a nurse that visits people on a regular basis is an increased feeling of fear among older adults. The main reasons for this are that routine tasks like vacuum cleaning, personal finance and personal hygiene takes increasingly more effort. Combine this with the dark and cold winter months where it is more difficult to go outside and seek help and the result is the feeling like life is taking over. In these situations, a care home could be a welcomed solution which allows older adults to sit back and relax with the knowledge that dinner will be ready and their beds made tonight.

- When you visit people as a nurse, they rarely immediately tell they are lonely when they first meet. However, as a nurse you can quickly get a feeling whether someone might be lonely. Indicators may be the way they take care of themselves. Asking a couple of questions about social activity can reveal how a person might feel. A quote from the interviewee translated to English was "Not to be disrespectful, but sometimes you can even smell it when a person is lonely". Arguments for this are a lack of personal hygiene when people stay in their pyjamas all day.
- Input from the nurses was the perceived preference for structure and continuity by older adults. When there is a possibility to attend weekly activities, the older adults have something to look forward to, plan their day around and they will build up a group of social contacts. Benefits include the chance to get to know other older adults with the same interests, with which they can share more details about their life over longer periods of time.
- A common barrier for older adults to join activities is not wanting to go on their own.
- An example by the interviewee was a group of teen moms who went to an information presentation. They all did not want to go, but there was one guy who saw the importance of the presence of the teen moms. Therefore, he told them he would pick them up and bring them home afterwards. They all went and found the sessions extremely useful. This could be applied to lonely older adults: some people need a push.
- The apps should be simple.
- There should be multiple options for different people. For some people, group activities do work and for some they do not. There are people who prefer one on one contact. Another example are activities with children, which some people may like, and others do not.

The points above are derived from the notes taken during the conversation. For completion purposes these notes can be found in appendix G.

4.3 Email conversations through Schrijfmaatje

As previously mentioned in section 2.4.2, Schrijfmaatje is a service where older adults can connect with other people who are willing to exchange letters through post or email. It provides a great way of one on one communication in which one can really establish a connection with the other person. For this project, it was only fitting to sign up and exchange emails with an older adult, talking about the project but also to learn about their view on life. I have matched with an 82-year-old woman that lives in the west of the Netherlands. Throughout the course of this graduation project there have been 8 emails sent in which both parties got to know each other.

The conversations with this lady are relevant for the project because she fits the target audience. She is 82 years old; her husband died 3 years ago and has mentioned she felt lonely once in a while. Immediately in her first mail, she mentioned something important which translates to "your project is very important for us elderly. There are a lot of things available, but it can not be found by everyone.".

Other important remarks made by her are that she mentioned to struggle with technology with certain things, but that she could manage when things stayed simple. She owns an iPad, which she thinks is easier to use. More older adults have mentioned they find tables convenient to use, which needs to be considered.

5. Ideation

The next step is to translate all the observations and obtained insights that are listed in chapter four to specific and measurable system specifications.

5.1 Folder, Mobile Application or Website

Older adults are super careful when it comes to internet usage. They are hesitant to download anything that is not familiar. Therefore, it would be a possibility to create a weekly folder that can serve as an overview of activities. This would be a good option as there is no technology to interact with for the older adults. Doing this would also support against the growing trend that forces older adults to use technology.

A paper overview would be more difficult to spread to the target audience due to postage fees and it would be difficult to keep the overview up to date. Also, older adults still need to sign up for the list. While there are options for offline sign ups, like their general practitioner, the system will still be managed digitally. This would include a digital sign up form, but also a system to manage all the "customer" information.

On the other side, observations have shown that older adults can learn how to use technology, as long at is explained properly and it is not too complicated to use. A downloadable application for mobile phones would be less suitable as older adults generally fear downloading something. Another reason against an app is the fact that more people have a personal computer compared to a smartphone or tablet. This has to do with the fact that most people in modern day society must have a desktop for things like maintaining their digital finance.

Because of the reasons stated above the prototype for this thesis will be a website that older adults can visit. Other supportive reasons for this choice are the ease of adding a mobile application later and the necessity to create a digital overview anyways when creating a paper overview.

5.2 Decentralized Overview

Ecare Innovatie B.V. is a company that handles all the innovation for Ecare Services. When Ecare Services was just starting, one of their major clients was Buurtzorg, which was about to conquer a big percentage of the home care market. To this day, Buurtzorg and Ecare are still

good partners. For this thesis, Buurtzorg is an interesting player to learn from. In hindsight, their success might have been due to a decentralized structure with many "teams" of about 8 people that are nurses for a certain neighbourhood. These teams are so called "autonomous teams" that try and work out everything by themselves. They are employees of Buurtzorg, but there is little bureaucracy within the company. When visiting the headquarters of Buurtzorg there were about 50 people, which is small for the number of employees.

When brainstorming for the final product of this graduation project, the following idea came up: use a decentralized structure for local overviews of activities. This would mean that instead of one country-wide overview there are many smaller individual overviews with activities. Using such a decentralized system could allow for overviews with activities that are accessible to older adults with decreased mobility.

One major challenge is to determine the definition of "local". When looking at Enschede, one could argue that an activity near Roombeek is not local for an older adult living in Twekkelerveld. On the other hand, this is already way more local than activities organized in Almelo, which would be less relevant to elderly from Enschede. For this project there will be two overviews where one overview is dedicated to Enschede and the other overview is especially for Hengelo. If the system is implemented in the long term, user feedback will tell whether this assumption of "local" corresponds with what older adults think.

When designing a product, it is important to design something that the target audience will actually use. This is also one of the major challenges and succeeding will make sure your users won't leave after a couple of weeks. One of the major aspects that can increase this is a feeling of ownership. To increase ownership each overview will be managed by a person or group within the area covered by the overview. Preferably this person is an older adult that is willing to do this voluntarily. The system will be explained to this person thoroughly.

5.3 Personas

Personas are an important part of the design process. They allow a designer to design their product with a specific person in mind, and the personas will facilitate brainstorm sessions in the future. The personas created for this graduation project are based upon some common characteristics of the interviewees and are therefore perfect to use for creating the prototype.

Both personas can be found in Appendix K.

During the interviews, there was a clear division between people. Two main groups are identified, and each persona represents one of the groups. The first group are older adults that live alone. Some have a broad social network, while others have little acquaintances.

In the case of the first persona, Ria Stoelkampe, she has a big social circle that used to come together often. Nowadays, she struggles to walk and needs a cane to get around. For longer distances she needs a walker. She had to move into an apartment and can therefore no longer practise her beloved hobby: gardening.

The second persona, Wim Olde Nijheuvel, luckily still lives together with his wife. She is his everything, but lately Alzheimer has noticeably taken a part of his wife. Recently, he has become increasingly lonely and noticed how much he was depending on his wife for social interaction. Now, his grandkids are what his life is all about.

Both personas have a basic understanding of the internet and therefore own a personal computer. The reason they have an understanding of the internet is because they are expected to handle their personal finances as well as their taxes on the computer.

5.4 User scenarios

To get a better insight in how the user interacts with the product, it is important to write down multiple user scenarios. For this graduation project, one user scenario will be written for each persona.

User scenario 1: Ria Stoelkampe
Last week, Ria went to the general practitioner for a checkup for her leg. She has been struggling to get around recently, which limits her in her everyday life. At the general practitioner, she explained that she misses social contact, to which he responded that she might be feeling lonely. While Ria thinks loneliness is unlikely, she took the recommendation of the doctor to visit this website with social activities that are close to her home.

While she is inexperienced in using her computer, she goes online and visits the site. The site is intuitive to use, and she looks at the different activities that are listed. Because she struggles walking, she filters the activities to culture, and decides to join a trip to the local filmhouse.

She enjoyed the trip to the filmhouse, and she met other people, she even became friends with some of them.

User scenario 2: Wim Olde Nijheuvel
Wim used to be busy all the time, but in the recent years of his retirement his days were getting emptier. At first, he found this relaxing, but ever since his wife to Alzheimer's he has not been able to enjoy himself. At the library, he looked through the flyers with activities in the region and his eye fell on a flyer of a website with an overview of activities.

At home, he started his personal computer and visited the website. There were plenty of activities that matched his interests, but Wim hates to visit a new place without knowing anybody else. This is a big barrier for him. Luckily the site allowed Wim to send the organization of the local fishing club a message to ask some of his questions. It turns out that the fishing association organizes weekly trips to a fishing lake, and Wim was free to join for a couple of times to see if it was for him.

When Wim arrived, he already knew Ben, as he spoke with him using the chat and they have exchanged phone numbers already. Ben showed him around and introduced Wim to the other people that were attending that day. The entire experience has been pleasing for Wim, and he really enjoyed himself.

5.5 MoSCoW prioritization

In order to prioritize all the possible features and elements that should be incorporated into the prototype, a MoSCoW table will be used. All the most important features will be added to the "Must have" and "Should have" sections, while other less important features will be added to the "Could have" and "Won't have" parts of the table.

Must have	
Signing up without creating an account.	One of the best received propositions was the option to sign up for any activity on the platform without having to create an account.
Specify preferred range	This feature has been added after the two evaluation rounds and therefore deviates from the earlier specified decentralized prototype. It is essential that older adults can choose how far they are willing to travel.
See to whom an activity is accessible	Accessibility is a big part in the lives of older adults, especially when they experience a decreased mobility. Therefore, an indication concerning the accessibility is a must have addition.
Chatting with other participants	Being able to get in touch with other people on the platform is a must have feature as this could help reduce the feeling of social loneliness. Giving people the option to chat with other people will give them control over their social activity.
Filter activities	Being able to filter all the activities is essential to easily search and navigate through all the activities on a site. When there is a poor filterability, the platform will fall for the same mistake as most of the activities looked at during the state-of-the-art research.
Should have	
Creating an account	This feature is a should have feature, as creating an account can drastically improve the user experience by remembering preferences. Accounts can also be used to generate user data for a recommendation engine.
Recommendation engine	Integrating a recommendation engine could lower the barrier of entry to attend an activity for the users. This is something that should be in the final product but takes a lot of time to implement and optimize and therefore will not be developed for the initial prototype.

Change font size	To include older adults who struggle with reading small text, being able to change the font size is something that should be added to the prototype.
Text to speech	Adding a text to speech function allows users to let the platform read details out loud. This can allow users with poor eyesight to obtain the written information on the website.
Could have	
Review functionality	Adding the possibility for users to share their opinion could allow other users to improve their choice of activity to attend. During the interviews, it became clear that older adults sometimes look at the reviews of other people before making a decision.
Customer service	For the final product, having a reachable customer service that is available for phone calls during office hours could improve user experience. Older adults often prefer to call people instead of using email or text messages. Organizers of activities are not always able to pick up the phone, so a customer service could improve the experience of both the older adult users as well as people that organize activities.
Won't have	
Website spread through reputable sources.	To promote the platform, it is essential to spread the site through reputable sources. For this project, there will be no attentioned directed at finding and reaching out to those sources. The reason for this is because it takes up too much time and there is no platform to show at the moment.

Table 1: MoSCoW table of website features

5.6 Database structure

To make sure that the prototype can be translated into a functioning website, a detailed database structure has been designed. The database structure has been moved to Appendix M and should also be viewed as an initial prototype. After the layout of the screens have been evaluated, chances are that the database structure needs to be updated, but the structure provided in Appendix M can serve as a starting point.

6. Evaluation

Iterative design is an important part of prototyping in order to aim for the best final product possible. Multiple evaluation moments allow a designer to tailor the prototype to the target user group as good as possible.

6.1 First Evaluation Moment

A week before the deadline of the prototype there was room for an additional evaluation moment with the target user group. To prepare for this evaluation, several screens of the potential website were created using a wireframe tool called Balsamiq [37] which allows for rapid front-end web design. The four screens that are created can be seen in Appendix H. There were 3 participants that were part of the target group.

6.1.1 Login Screen

The first screen that would presumably cause some discussion among the target audience is the login screen. In this stage of designing a product aimed at older adults it still is unclear whether creating an account is going to be mandatory to attend activities. When brainstorming it became apparent that there are pros and cons for the user experience. The privacy of the user could be improved as one must be a member of the community to see profiles. On the other hand, it would be an extra barrier of entry as older adults are hesitant to create accounts.

When the three participants of the evaluation saw the login screen, they immediately took a stance against having to create an account. They would much rather be able to sign up for an activity by providing their name, telephone number and email address in the input bar which would sign them up for an event. For observations and previous interviews not, all adults are able to properly use their email so just a name and telephone number might be an option.

One argument against creating an account is yet another password that needs to be remembered. To counter this, an option would be to create an account using your current email or Facebook account. When proposed in a non-biased way one of the participants expressed her fear of using her mail and Facebook account for anything other than their intended websites due to privacy reasons. She did not want anyone else to have access to her mail. While using a mail account would not give another website access, this is the immediate connotation and therefore possibly not suitable. The other two participants agreed with this statement.

Furthermore, the participants noticed the information buttons next to the input fields and agreed that this was copied from the belastingdienst [38]. This is a good thing as the recognizability of the icons was intentional.

6.1.2 Overview selection

The second screen shown to the participants is the overview selection screen, which shows the initial screen the user sees when they did not yet choose a specific local overview. The major

remark that needs to be integrated came from an older adult that still was rather mobile for her age. At 65 years old she did not mind travelling to other parts of the Netherlands to attend an activity. It was at this point that it became apparent that the user needs to be able to choose the distance he or she is willing to travel for an activity. This would mean that the user is able to select the desired maximum distance from his or her location to the activity. A site that uses a similar feature is Marktplaats [39] which allows their users to choose the distance to an item for sale.

For the participants of the evaluation the option to enlarge the font size for people with decreased eyesight seemed intuitive and straightforward to use. The question that was asked was "How would you increase the font size of this screen?" and they immediately pointed to the top right corner to the correct icons. A remark that needs to be integrated in the final product is the option to play the text as a voice through the speakers. This makes sense as enlarging font size includes people with a decreased eyesight and integrating text to speech includes people with decreased hearing ability.

6.1.3 Activity Overview

The third screen was a preview of a potential overview with activities. The main thing that popped up was the need to carefully think of the category names. One of the categories was "lunch and dinner" which the participants interpreted as activities that include both lunch and dinner. A remark was "when I am done with lunch most of the times I want to go home and would not be willing to wait till dinner". The proposed solution was separating the categories and instead use "Lunch" and "Dinner" as two separate categories.

Another feature that needs to be added here is the ability to search the activities. This would go in the top right corner. Sorting the activities as well as determining the range from your location also is important. Using the Marktplaats interface as an example would be a suitable option.
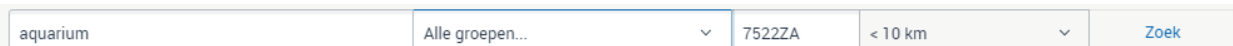

Figure 7: Marktplaats search bar

6.1.4 Activity Detail Screen

Finally, the three participants got to see the activity screen which would be created for each individual activity on the website. It was important to learn their views on some features that would improve the feeling of a community. One major point was the ability to see who else was joining an activity. To find out their opinion, the question "How important is it for you to be able to see who else is joining an activity?" was asked. All three participants responded against this option. They did not care about being able to see who else is coming and they also did not want other people to know that they were attending an activity. One lady mentioned the risk of burglars knowing that she was not at home.

Another question was about the importance of being able to contact the organizer of the activity. The answer revealed another feature that must be in the final prototype. When you can sign up

for an activity, you should also be able to sign out for an activity. To do this, one should be able to contact the organizer. The preferred way to contact someone is by telephone, which is something all older adults agreed on. The ideal user experience would be achieved when someone is always available to answer the phone, as a phone call which is left unanswered causes additional work and a feeling of stress to older adults as they must call again on a later time.

Another potential feature was having a comment section on each activity page where people could ask public questions and respond to each other. This is like the way people can comment on Facebook posts, and would be a great way to boost a community feeling as well as increase the feeling of ownership levels for the platform. Because the three participants of the first evaluation session had a strong opinion against creating an account as well as caring what other people do or think concerning the activities it was tough to discuss these other possibilities. With the obtained insight a probable conclusion would be to make creating an account optional. It would save the user some time as they do not have to fill in their information again and again. It could also allow the user to chat with other users and react on activities.

To improve the trustworthiness of the platform a potential feature could be rating activities and organizations. Adding a star-rating to each activity that is organized could give people more certainty when joining an activity. This possibility was not discussed during the first evaluation but will be added to the final product.

One final addition to the activity page is a picture of one of the people who organize the event. Adding a picture of someone who will also be at the event will make sure that anyone who attends the event already knows one familiar face to which they can reside. This could potentially lower the barrier of entry for people who are hesitant to join.

6.2 Second Evaluation Moment

After the first evaluation session, all the recommended changes were applied to the prototype. The resulting screen can be found in Appendix I. These screens were again evaluated with the target user group. Three new people aged 64, 82 and 74 were interviewed to elicit their opinion towards the changed prototype.

The summary of the interview can be found in Appendix J.

6.2.1 Activity Overview

The first screen shown is the activity overview. The remarks to this screen were positive, and noticeably better than during the first evaluation moment. When asked, the participants did not think the layout of the activity overview was overwhelming. An observation during the conversation was that the participants found the filter sidebar as well as the search bar complex, because it took some time to explain the functionality to the participants.

6.2.2 Activity Screen

The second screen was the activity screen that showcased a single activity. A lot of things have changed compared to during the first evaluation moment. The first remark was that the text might be too small to be comprehensible to older adults. This indicates that the option to enlarge the font, that is prominently on the screen, might not be intuitive to use.

To properly evaluate this screen, there were a couple of questions that were asked to the interviewees. The first question asked was "How important is it to you to be able to contact the organization of an activity?" which proved to be crucial for the older adults. They specified that often there is an email address, a website as well as a phone number. This was important to them as they each had their own preferred way of contacting someone.

One person always called, the other only called when they already knew the person and otherwise preferred to write an email. The third person preferred to write an email as she could not stand landing in someone's voicemail. The reason for this was because she had to call them again, or else risk not hearing back.

The second question was "What do you think of the possibility to know at least one person before you attend the event?". The participants thought it was very convenient to know one person who you can walk up to when arriving at an activity you have not been to before. One person mentioned that this could reduce the barrier to go to an event, which is exactly what was intended.

When a participant saw that the accessibility was included on the activity page, she said that it was critical to be able to see this information. A quote from her translated to English is: "Ohh, that is really important, really important. Especially for older adults, I would almost call it a must.". After this evaluation point, seeing the accessibility of an event has been moved to a must have point on the MoSCoW scale.

They did not really find being able to contact other participants to be important. They were afraid of their privacy. After explaining that the option would be optional, they showed more understanding.

A feature that made the participants excited was the possibility to sign up for an activity without creating an account. These people also showed a severe dislike to creating an account and would not use the service when creating an account was mandatory. Creating an account was not an option because they did not want to give the website all their information, but they also did not want to have to remember another password.

Seeing what other people thought of an activity was not important to any of the participants. One of the three participants said that he always looked at ratings given by other people, but this applies more to buying new consumer products. This evaluation confirmed that the review feature should be labelled as a "Could have" feature in the MoSCoW prioritization.

6.2.2 Messaging Screen

Since the first evaluation moment, the messaging screen has been introduced. This therefore is the first time that this screen gets any feedback from the target user group. The initial impressions were positive, and the participants said that they would be interested in sending messages, especially to the organizer of an activity.

A potential pitfall that comes with a messaging functionality on a website aimed at older adults could be their inability to properly spell words due to a lack of education. A participant noted that he struggles with spelling words correctly, and therefore always prefers to call someone . To assist users in writing messages, an autocorrect could be implemented in the messaging system to help older adults formulate their desired message.

6.4 Final Evaluation Moment

After two face to face evaluation sessions, it is important to validate the opinion of the interviewed older adults. The reason for this is because the opinion of the 5 older adults that were interviewed could be different to other people. Using a digital survey, it is possible to elicit the opinions of more people.

6.4.1 Questions in the questionnaire

The method for this evaluation is already described in section 3.2.1, but the questions could only be specified after conducting the first two evaluation sessions. The questions that are used in the questionnaire, together with the English translation, can be found in Appendix L.

6.4.2 Distribution of the questionnaire

In section 3.2.1 the risk of using convenience sampling was briefly mentioned. Some of the respondents can be not a part of the target users, and therefore the survey can collect irrelevant information. It is important to know exactly how the survey is distributed to explain the resulting demographic of the respondents. The following list contains all measures taken to spread the questionnaire.

- Sent to most members of the "Enschedese midwinterhoorn blazers" via Whatsapp.
- Sent to all members of the Checkers association in Hengelo by email.
- Sent to all employees of Novel-T with a request to share among their personal network.
- Shared on the researcher's personal Facebook profile and shared 16 times by other people to their personal Facebook profiles.
- Shared on the researcher's LinkedIn profile.

As a result of this effort, the url of the digital survey could be spread to other potential respondents by anyone who wanted to assist this graduation project. This could include asking the parents, grandparents, neighbours or other acquaintances to fill in the survey.

6.4.3 Respondent demographics

The survey has been open for respondents for exactly two weeks, from 6-1-2020 to 20-1-2020. During this time, there have been 23 people who took the time to fill in the survey. As the survey has been distributed using a lot of social media, a part of the respondents is younger than 55 years old. Ideally, these respondents would not be considered as they are not part of the target users. However, because there are only 23 respondents, every opinion is valuable, so the 4 respondents of people younger than 55 will be taken into consideration for the rest of the survey.
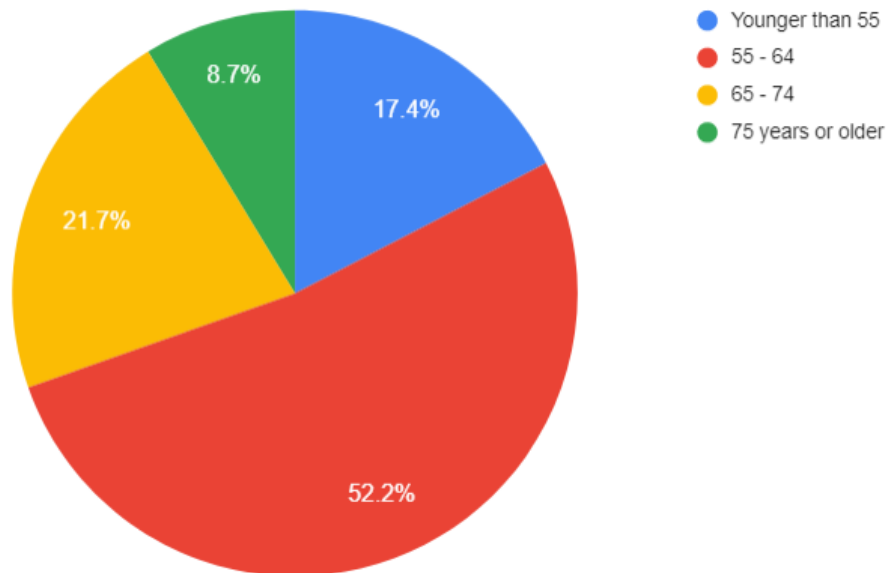

Chart 1: Age demographics of the survey respondents

Age group	Percentage	Number of respondents
Younger than 55	17.4%	4
55 - 64	52.2%	12
65 - 74	21.7%	5
75 years or older	8.7%	2

Table 2: Age demographics of survey respondents in a table

During the brainstorming phase of this project, the ideal target users would be older adults that live alone. This is an important demographic as these people have an increased risk of feeling lonely. Therefore, the second and third questions of the survey revealed the living situation of the respondent.

The majority of the respondents lives together with a partner. The second biggest group is widowed, and therefore also have an increased risk of feeling lonely. This makes them an important group in this research. The pie chart below shows the distribution of all the respondents. Chart 2 elicits whether the respondents have a partner or not, and chart 3 shows whether the respondent lives with other people or alone.
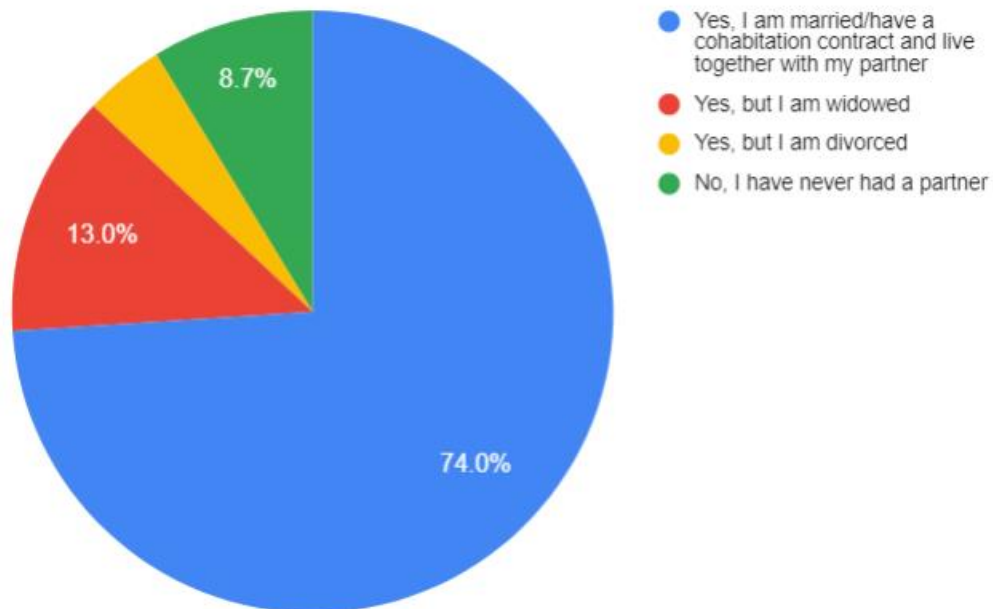

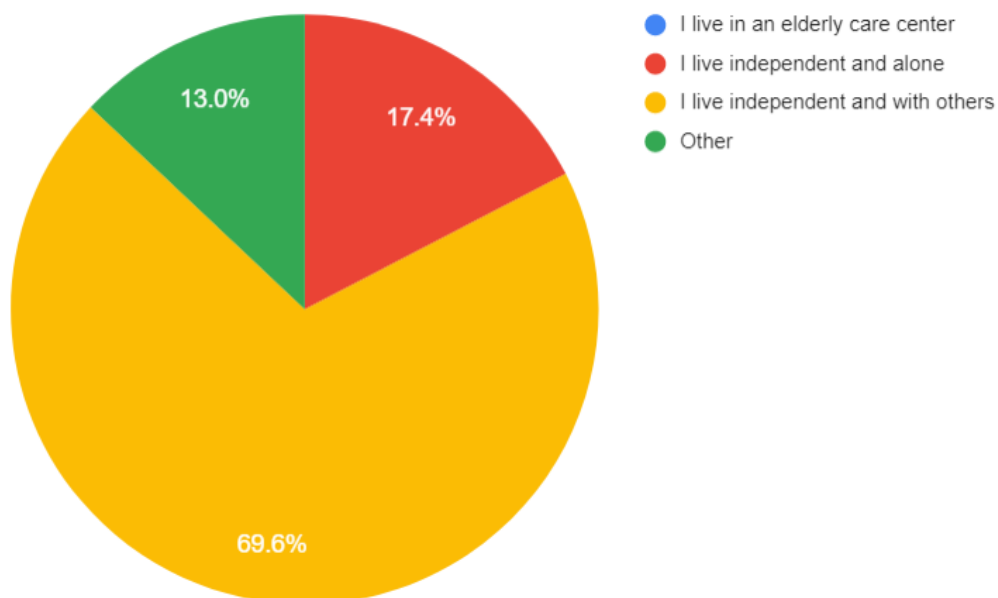Chart 2: Partner status of survey respondents

Chart 3: Living situation of survey respondents

Interestingly, the survey did not reach anybody who lives in an elderly care center. Next to this, a significant portion of the respondents selected "Other" to describe their living situation.

Finally, the last demographic question revealed what modern technology the respondents owned. Options were a desktop PC, a laptop, a smartphone, a cellular phone, a tablet or iPad. The table below shows the result.

Desktop PC	11 (47.8%)
Laptop	19 (82.6%)
Smartphone	21 (91.3%)
Cellular phone / Non-smart phone	1 (4.3%)
Tablet or iPad	16 (69.6%)

Table 3: Modern technology owned by respondents

Surprisingly, 91.3% of the respondents have a smartphone, which chances a decision made earlier in the design process. With such a large number of smartphone owners, a mobile-scalable website or a phone application is more promising.

6.4.4 Likert scale statements

Within the survey, the next set of questions were a couple of statements with which the respondent could agree on a scale of 1 (Very important) to 5 (Not important at all).

All statements are added to the survey to confirm or deny an assumption or finding that resulted from the careful observations and interviews. The first statement confirms that users find it important to be able to reach and get in touch with the organizing party of the activity.

I find it important to be able to get in touch with the organization of an activity.
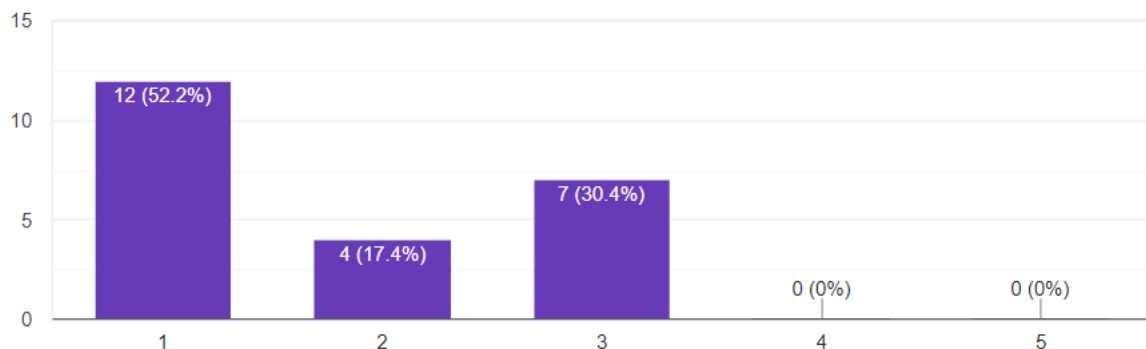
23 responses

Figure 8: Getting in touch with organization of activity

The second statement shows no clear opinion on whether users value the option to get in touch with other participants. In the interviews earlier, there was a similar mixed opinion toward getting in touch with other participants. A proper angle to take on this would be to make messaging other participants optional.

I find it important to get in touch with other participants who will also be attending an activity.
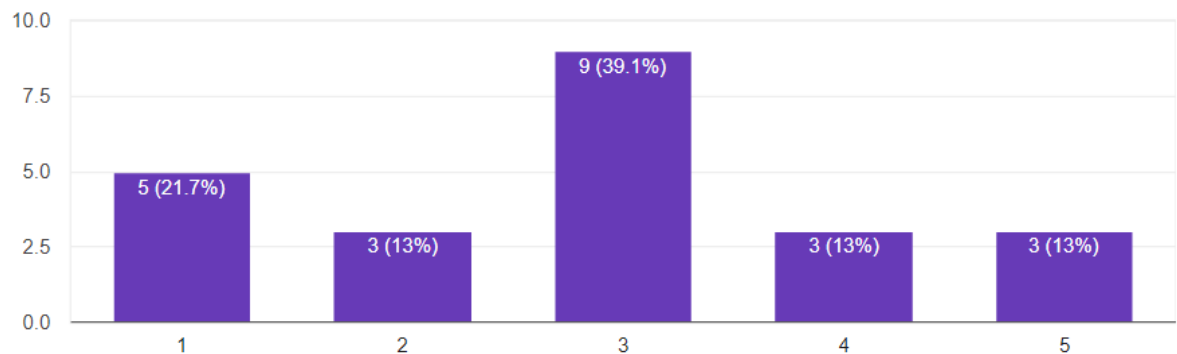
23 responses

Figure 9: Getting in touch with other participants of an activity

Next, there is another statement without a clear conclusion. People are both excited as well as reluctant to seeing other participants to the activity. In the open questions it will become clear that a lot of people do not want this because of privacy issues. As there are still people who do find it important to be able to see who else is attending an activity, this feature will be an optional addition to the final product.

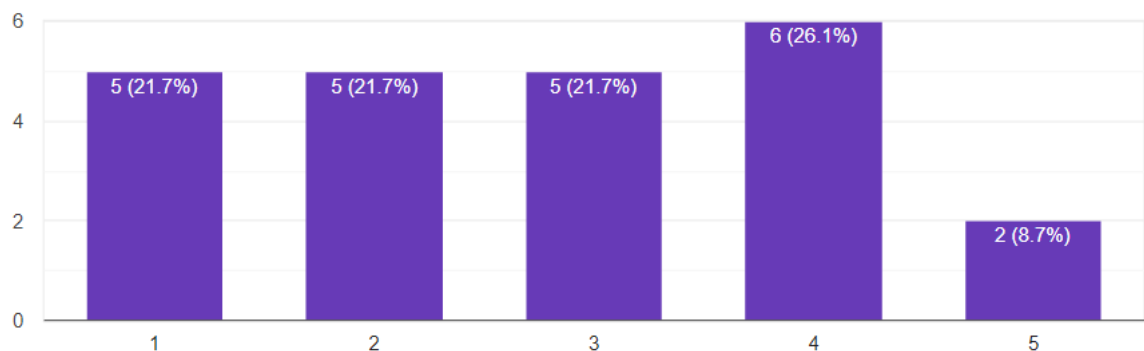I find it important to be able to see who else will be attending an activity.

23 responses

Figure 10: Seeing who else is attending an activity

Figure 11 shows a clear opinion: people want to decide how far they travel. This confirms the feature to choose your own radius when looking for activities.

I find it important to decide how far I am willing to travel to an activity.
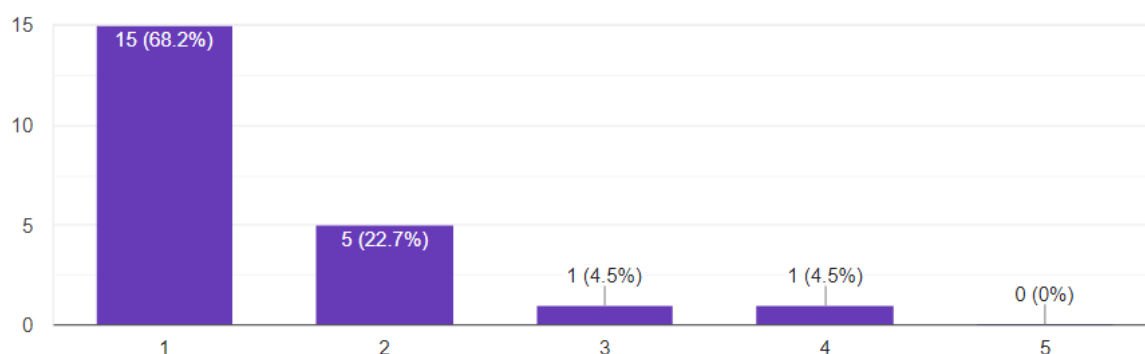
22 responses

Figure 11: Deciding how far a user is willing to travel

From the interviews it became apparent that accessibility information is crucial, especially for older adults who have a decreased mobility. From the results of the survey in figure 12, it can be concluded that every activity on the website should have detailed information to whom it is accessible.

I find it important to be able to see for whom an activity is accessible. Think about wheelchairs, walking canes etc.
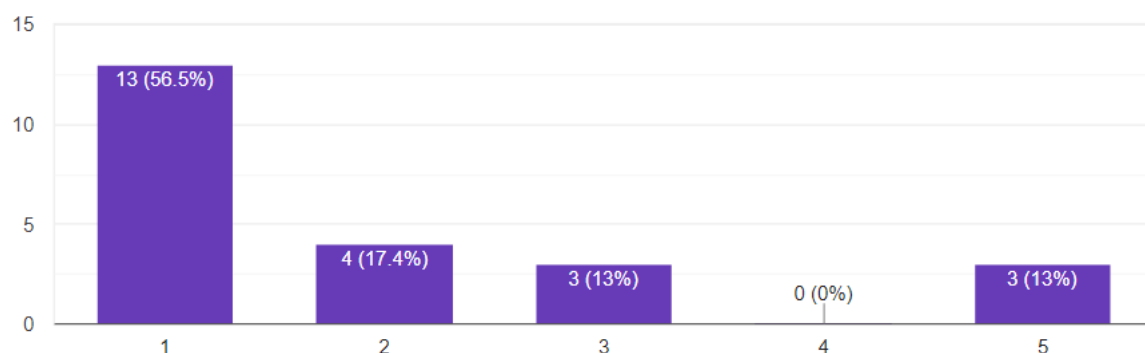
23 responses

Figure 12: Being able to see the accessibility of an activity

Figure 13 follows on the subject of accessibility but is more concerned with the reachability of the event. All information about travelling towards the activity should be incorporated with the accessibility information.

I find it important to know beforehand how and if an activity is reachable by car and public transport.
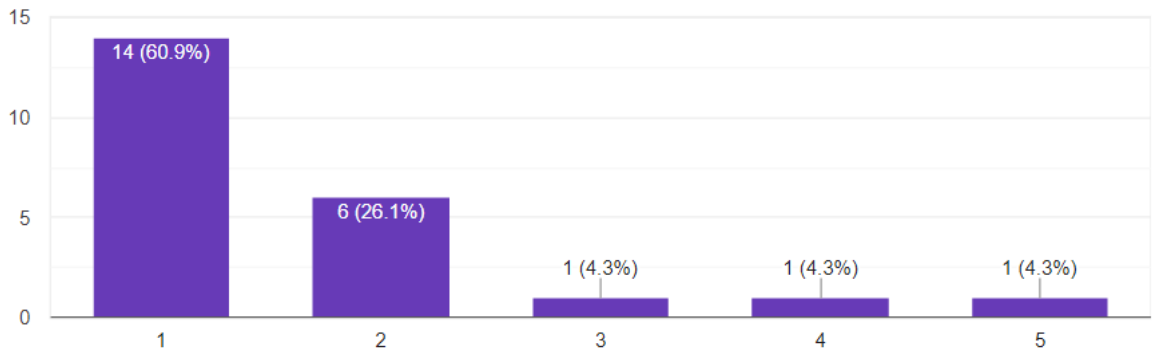
23 responses

Figure 13: Reachability by car or public transport

The next statement had a surprising result compared to the findings from the interviews. In the interviews, interviewees did not really care about the reviews and experiences of other people. It turns out those people were part of the loud minority, as the majority of the survey respondents did find it important to be able to see what other people thought. This opinion should be translated into a feature in the final product, which could lower the barrier that users might experience when thinking about attending an activity.

I find it important to be able to see what other participants, who have already participated in an activity, thought of it.

22 responses

Figure 14: Option to leave and view reviews of activities
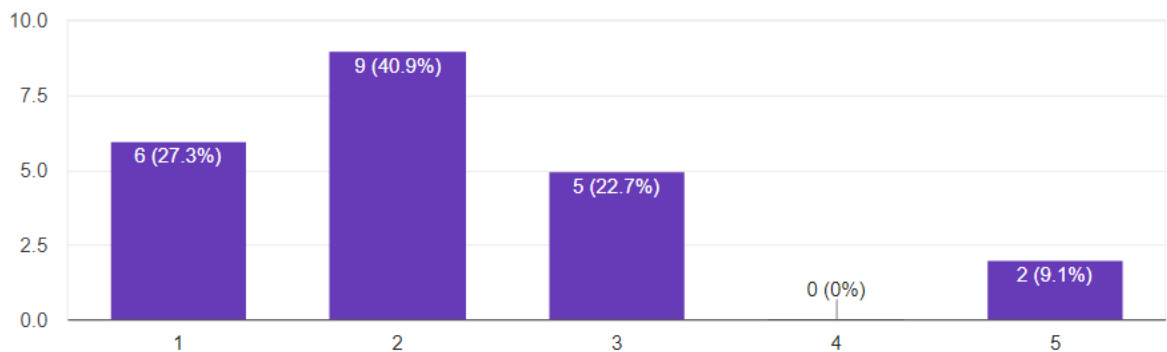
While more people agreed than disagreed with the statement, there is not one clear conclusion that can be concluded from these results. A statistically interesting conclusion on the opinion of the target user on this statement would require more responses. For now, it is apparent that people's opinions differ when it comes to knowing someone beforehand. As a recommendation,

this question could have been rephrased using the word "aanspreekpunt" or "person of contact" to better represent the intent of this question.

When I attend an activity, I like to know at least 1 person beforehand who will also be attending the same activity.
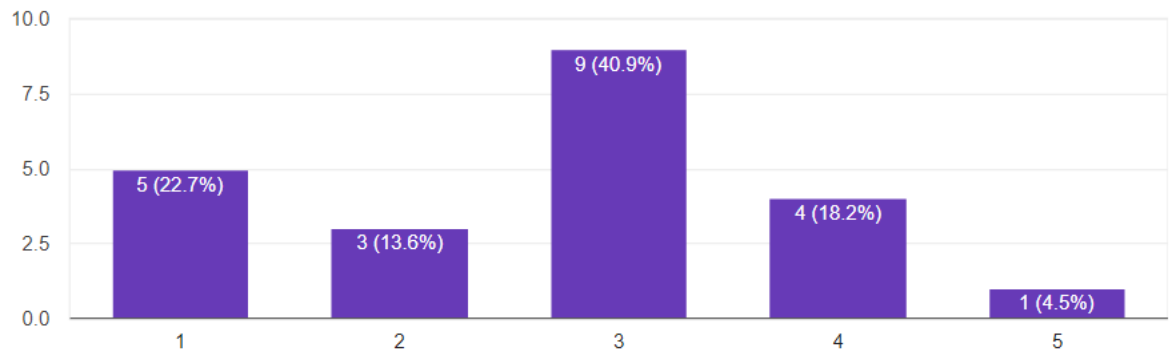
22 responses

Figure 15: Knowing someone beforehand when attending an activity

Another surprising result is the respondents' opinion when it comes to creating an account. During the interviews and observations, there was a very strong, almost unanimous opinion against creating accounts. People thought it was an invasion of their privacy and a struggle to keep track of more passwords. The response on the following statement in Figure 16 shows that people find it acceptable to create an account if the website handles their data well. The question could be biased, as observations have shown that people always doubt the way websites and corporations handle personal information. The result of the statement does show that the target users have no problem with creating an account when the site can convince them that they handle their personal data safely.

If the website handles my personal data safely, I do not mind creating an account.
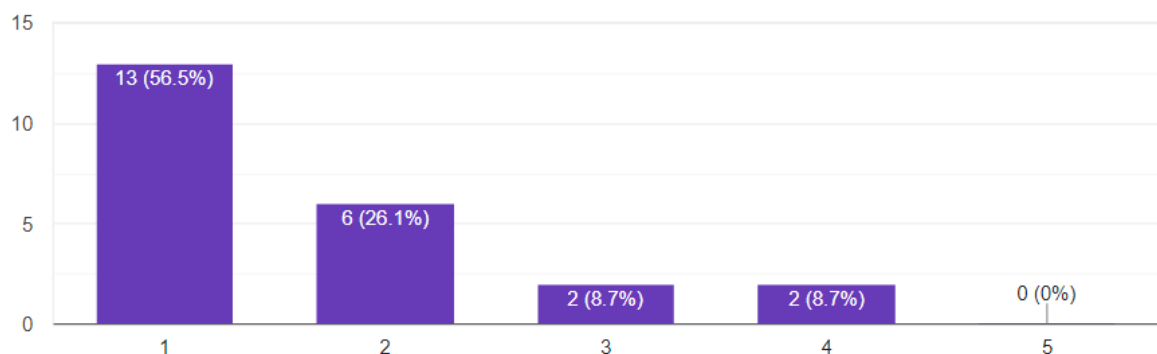
23 responses

Figure 16: Creating an account if website handles data safely

6.4.5 Login screen feedback

The first screen which the respondents of the survey saw was the login screen, visible in Appendix E. For each screen, there were three open questions asked to invite the respondent to share his or her opinion. These three questions are "Are there elements in this screen that you are missing?", "Are there elements in this screen that you find obsolete?" and "Do you have any further remarks concerning this screen?". All the exact responses on each screen are added in Appendix L, but in the coming section only the most prominent findings will be discussed.

For the login screen, there were several remarks that, when implemented, could improve the user experience. Some people thought that the login screen was the homepage of the website, which became apparent because of remarks like "I don't want to create an account of log into the site in order to be able to view which activities are there." and "On the landing page/homepage I would show interesting activities immediately.". Also, the comment "[I am missing] a (short) description that tells me why this website is interesting for me (...) so I have a reason to create an account and log in.".

The second thing that people are missing on the login screen is a link to the privacy policy and terms of services. This observation is backed by comments like "[I am missing] privacy policy" and "A link to the terms of services".

This is extremely important to the users, and it can also help establish credibility of the website, which makes people trust the platform more. Therefore, a proper privacy policy and terms of services can be considered a "must have" feature for the final product.

There were remarks from people who thought there were obsolete elements on this page. A small list summarizes the relevant comments.
- **The log-in part is too big.**
- **The information to help logging in does not add information.** Without the ability to ask the respondent to elaborate, this comment could be made because the placeholder for the text are scribbly lines. The sketching software called Balsamiq offers the unreadable lines as a placeholder for future text.
- **Menu items like "my account" can be left out when not logged into the site.** This is a true remark, that will be fixed when programming and implementing the functionalities of the site in the final product.
- **The screen looks a bit crowded.** There was one remark which noticed that the screen looks a bit overfull. While this remark came from just one person, it is important to beware that the screen does not come off as intimidating.

The last question asked for other remarks about the login screen. This is where many respondents said that the screen looked dull, boring, simple and uninviting. In total there were 5 remarks about dull colors, 2 about using the wrong font and two individual remarks. The first criticized the name, which translates to "Senior Active". In short, the name implies that all activities are for old people, and the respondent does not want to attend such activities. While the product is not for everyone, it is important that the name induces the right responses in

people's minds, and therefore this remark could indicate a misleading name. The last comment says that things need to be kept simple in order to be effective among older adults. This confirms earlier findings.

6.4.6 Activity overview page

Just like the previous screen, respondents could give their opinion on the activity overview prototype. The results will be visualized and discussed using a list, as there are no clear conclusions or repeated comments made by multiple of the same respondents.

- **The screen is too small**. This is a remark that was made a couple of times but will be fixed when the wireframes are integrated into a real website. The reason why people experienced the site to be small probably was because the screenshots were added in the survey and showed nowhere to full-screen on their devices. If the respondent was filling in the survey on their phone, it would be even harder to read.
- **I am missing a way to search by postal code / city name on a range of X kilometers.** This remark is noteworthy, as there is a way to search the activities within a given radius from a postal code or city name. Another remark noted that the search function is positioned in an illogical spot. This could be the case, and these comments ask for a further investigation on the placement of the search bar. To do this, one could present the same screen with the search bar located at different places and check what screen people prefer.
- **Duration of the activities (2 remarks).** On the overview, people would like to see at a glance what activity takes up how much time. This is a good suggestion, and therefore should be added to the final product.
- **Accessibility** is something that a respondent missed. While this information is present on the detailed page for the activity, this could also be valuable on the overview. It could potentially be a filter-characteristic so people could eliminate activities which are not suitable for them.
- **Other activities** were requested when asked what elements were missing on the screen. Recommended activities were board games, billiards, card games etc. From conversations with the supervisor of this graduation project, bridge is a popular card game that should be on the site.
- **Location within the website**. Someone noted that on the screen they could not see where on the site they were and how to get back. Adding a "homepage > activity overview > walking football" indicator could increase confidence when older adults are navigating through the site.

6.4.7 Conversation page

As the survey progressed, the amount of responses and engagement with the questions decreased. For the conversation / messaging screen, there were between 12 and 14 responses for each question. A lot of these responses answered the question with "no" or something similar, without adding any value or their opinion to the questionnaire.

The only answer given to what elements were missing was the option to see whether you are logged in. The respondent would have liked to be able to see if he/she was logged in, and under what name he was logged in. There were no elements noted as obsolete. Further remarks included the following.

- **Moderators** could make sure that the messages stay positive. The respondent wondered how the website was going to manage annoying or insulting messages.
- **Unclear with who the user can exchange messages.** A respondent noted that it was unclear with who the user is able to chat.
- **Dull**. Just like with the login page, there was a remark that the site looks dull. As previously explained, when integrated into a realized product this will be different and needs to be reevaluated by that time.

6.4.8 Activity screen

Potentially one of the most important screens on the website will be the screen of an individual activity. On this page, people will see all the information, and this information must be complete. If there is anything missing, the user might have unanswered questions that create a barrier and make the user choose to not attend. The questions resulted in good and usable feedback.

The element that someone was missing was a link to the location of the activity on a map. This should be added. On the screen, 3 people thought that showing the names of other people who are attending was obsolete. The reason for this most likely is the privacy of the users. Other comments made are a recommendation to add a button to ov9292 [] to navigate to the activity. Another respondent had commented a good question that is still unclear: if the user signs up for a weekly activity, does he/she sign up for one date or for all the weekly activities in the future.

6.4.9 Contact page

Initially, this page seemed simple and straightforward, but the feedback on the survey resulted in essential recommendations that should be considered "must-have" features. The biggest recommendation was to add a phone number to the page, as many older adults prefer calling over sending an email. Another comment was the absence of asterixis to indicate what text fields were mandatory. Finally, inserting your name and email would be obsolete whenever the user is already signed into their account.

7. Conclusion

From all the evaluated results and obtained knowledge, it is possible to answer the main as well as the subordinate research questions specified in chapter 1. To restate the question, the main research question is "**Is it possible to develop an overview of local social activities to benefit the reduction of social loneliness amongst lonely older adults?**"

The project has succeeded in developing an overview of local social activities for older adults. The resulting prototype visible in Appendix I is complete and has been evaluated 3 times with

the target users. This means that all the elements present on the screens have been evaluated, and the prototype can serve as a valid and tested starting point for an actual functioning website. Currently there are plans to deploy application development students to realize the prototype. When there is a functioning website there is the opportunity to continue the iterative design and see how the target users react to and use the website.

The first sub question is "**Is there a demand amongst lonely older adults for an overview of social activities that they can attend?**" to see whether there is an actual demand among lonely older adults for such an overview. From the interviews with older adults, specified in section 4.1 together with the results of the email conversations described in section 4.3 it has become clear that there indeed is a demand for a centralized overview with available local social activities. This result is promising and may allow the project to continue after this graduation project, to facilitate social interaction between older adults.

To continue, the second sub question is "**Do lonely older adults currently know how to find and attend a local social event?**". From the qualitative research conducted, it appears that most older adults that have participated in the study do know how to find suitable activities to their likings. However, the state-of-the-art research tells a different story, as there appears to be many overviews that include activities throughout the Netherlands. Activities throughout the country, in combination with poor searchability, results in a poor user experience for older adults as the user needs to look through many irrelevant activities in order to find a suitable one.

Thirdly, the sub question "**What is the most effective way of presenting, reaching and distributing an overview of social activities amongst older adults that live alone?**" can be answered. The most effective way, according to the results of this project, is to utilize a website to spread activities to older adults. A website allows the user to look through activities without having to download files or software onto their devices. Also, a website is cheap in maintenance and easy to update, which makes it preferable over a folder or flyers. Another important factor that needs to be considered when answering this question is to know that older adults primarily visit new websites that they did not visit before when they learned about the website through a reputable source. Example of trusted sources are acquaintances, the newspaper, magazines or through public institutions like the library, healthcare centers, doctors or the church.

The final sub question is "**Is it possible to personalize the selection of activities in an overviewed aimed at reducing the feeling of loneliness based on the preferences and circumstances of an older adult?**" which is possible. To do this, one needs to use the passion that many older adults still have from previous hobbies they used to practise in the past. Looking at the personas from section 5.3, it becomes apparent that users like Ria Stoelkampe still do leisure activities like baking bread, that she used to do when she was younger. Next to personal preferences, which can be elicited using a couple of simple questions, it is possible to use user data obtained on the accounts of the website to recommend activities based on previous activity.

8. Discussion and Recommendations

Despite all the efforts, there are always things that could or should have been done differently. When doing research, the discussion is one of the most important parts. For this project, there are multiple aspects that must be included in the discussion to maintain the credibility of the final prototype.

8.1 Sample size of interviews and survey

The sample size is important when it comes to obtaining significant results. In total, there have been 3 conversations with 8 people in total in an interview-like setting. The first conversation was an interview with 2 participants, the last 2 conversations were the two evaluation sessions described in sections 6.1 and 6.2. Preferably, more interviews should have been conducted to reach a point where many people are giving the same answer. More interviews beforehand would have meant a better first attempt prototype and would have eventually improved the quality of the final prototype. The evaluation sessions proved to be insightful and evaluating the prototype with more people could potentially have revealed more points of improvement.

For the survey, it is especially important to have a larger sample size to be able to find statistically significant results. Instead of the 23 respondents, ideally the sample size would be at least 80 respondents.

However, in both cases, this was not possible due to the limited time available for the project. As a recommendation for further research, it is important to update the final prototype and evaluate it again with more people from the target audience.

8.2 Sampling methods

The second point of discussion is the sampling that was used throughout the project. Due to time constraints, both the interviews as well as the survey were prone to convenience sampling. Starting with the interviews, it should not have been a surprise that people at a computer lesson had access to modern technology. Instead, using Buurtdiensten or Buurtzorg to find one on one conversations with older adults that live alone might provide a completely different view on technology usage among older adults. It would have been best to join employees of Buurtdiensten on their shifts, which would provide a way into the houses of older adults, where they are most comfortable.

The survey has been primarily spread through social media and was completely digital. This way of operating completely excludes all older adults that either have no computer/smartphone or who do not know how to fill in a digital survey. It would have been better to create both a digital and a paper survey, and spread the paper survey via post, the general practitioner, Buurtzorg, Buurtdiensten, the library or the dentist. Next to being more expensive (paper, postage stamps) this way of conducting a survey takes more time and therefore was not possible within the scope of this graduation project.

Another point of discussion concerning the questionnaire is the fact that many respondents selected the "Other" option to describe their current living situation. This showed an error in the way the question and potential answers were formulated, and it would be interesting to alter the survey and redistribute it to find out what the people who selected "Other" meant.

8.3 Tracking reduction in loneliness

The overall goal of this project is to reduce social loneliness, but the main focus was on creating a suitable and intuitive website for older adults. The reason that the focus was not on reducing loneliness is because measuring loneliness, and especially a change in perceived loneliness, takes a timespan of multiple years. The feeling of perceived loneliness can change on a daily basis and is really subjective.

Within the 6 months that this project needed to be executed, it is not realistic to accurately measure a reduction in loneliness among the target user group. Therefore, the theme "loneliness" is in the title and main research question but is not the focus of the project.

8.4 Recommendations

This section will include aspects that were outside of the scope of this project or are promising next steps, that can be recommended for future research. This list is in no particular order.

1. **Translate the prototype into a functioning website.** The created prototype created serves as a tested and proven starting point to create a functioning website that can serve as an overview of activities. This task can be done by an application developer, a team of student or by another Creative Technology student with the assistance of ECare. The challenges are translating the Wireframe design into a website, by taking the sketch-like grayscale prototype and creating a coded site. After the website is created, the first users can use the site, and the generated user data can be used to improve the site.
2. **Create and application.** When the site is created, turning the platform into a mobile application can include more older adults. There are many older adults who prefer to use their smartphone or tablet because the interface is more intuitive. A website can serve as a promising start, but one can also create an app without creating the website first.
3. **Recommendation engine based on user characteristics.** Recommending the right activity to the right user may improve user experience. Ways to implement a recommendation engine could be by asking the user questions about their preferences when signing up, or by using user data generated by previous activity on the platform.
4. **Conducting more interviews.** Talking with more target users will provide a better understanding of their needs, which can be translated into an improved design of the prototype. For this reason, conducting more interviews is something that needs to be done.

5. **Create and distribute a new survey.** There are a couple of factors that need to be improved in the survey, but primarily the sampling needs to be improved. Creating and spreading a paper survey among the actual target audience can lead to completely new insights concerning this project.
6. **Find other parties willing to work together**. The research has shown that there are many other parties with the same goal, like the municipalities or care centers. Looking for parties that are willing to support and promote the platform will increase the reach, but also motivate more people to sign up as older adults learn about new sites through reputable sources. There are many care centers that organize a lot of activities for older adults, which can be uploaded to the site to fill the offer of activities.
7. **Implement an autocorrect feature in the messaging functionality.** From the research it became apparent that many older adults don't have an excellent level of the Dutch language, and there are users who struggle with writing written messages. As it is important to bring people together, also through sending messages, the barrier to send a message should be as low as possible. Therefore, implementing software that corrects and recommends words and sentences can cause more users to use the chat feature.

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10. Appendices

Appendix A

1	Hoe oud bent u?
2	Wat zijn uw hobby's?
3	Bent u getrouwd of getrouwd geweest?
4	Heeft u kinderen?
5	Wat voor een dingen en activiteiten doet u in uw vrije tijd?
a	Nu niets? Wat heeft u in de afgelopen jaren allemaal gedaan?
b	Waarom bent u gestopt met deze activiteiten?
c	Dus u kijkt veel tv en lees veel, gaat u ook wel eens met anderen dingen doen?
6	Doet u wel eens dingen samen met kinderen, vrienden of familie?
a	Waarom bent u gestopt met deze activiteiten?
7	Heeft u wel eens activiteiten georganiseerd?
8	Heeft u ooit vrijwilligerswerk gedaan?
a	Wat voor een vrijwilligers werk heeft u gedaan?
b	Hoe lang heeft u dit gedaan?
	Wilt u van elk van de volgende uitspraken aangeven in hoeverre die op u, zoals u de laatste tijd bent, van toepassing is? Omcirkel het antwoord dat op u van toepassing is.
	[GIERVELD LONELINESS SCALE FOR SOCIAL LONELINESS]
9	Heeft u een computer, tablet of telefoon?
a	Waar gebruikt u deze zoal voor?
b	Download u soms apps?
c	Bezoekt u websites die u nog niet eerder bezocht heeft?

Appendix B

	Wilt u van elk van de volgende uitspraken aangeven in hoeverre die op u, zoals u de laatste tijd bent, van toepassing is? Omcirkel het antwoord dat op u van toepassing is.					
1	**Er is altijd wel iemand in mijn omgeving bij wie ik met mijn dagelijkse probleempjes terecht kan**	**Ja!**	**ja**	**min of meer**	**nee**	**Nee!**
2	Ik mis een echt goede vriend of vriendin	Ja!	ja	min of meer	nee	Nee!
3	Ik ervaar een leegte om me heen	Ja!	ja	min of meer	nee	Nee!
4	**Er zijn genoeg mensen op wie ik in geval van narigheid kan terugvallen**	**Ja!**	**ja**	**min of meer**	**nee**	**Nee!**
5	Ik mis gezelligheid om me heen	Ja!	ja	min of meer	nee	Nee!
6	Ik vind mijn kring van kennissen te beperkt	Ja!	ja	min of meer	nee	Nee!
7	**Ik heb veel mensen op wie ik volledig kan vertrouwen**	**Ja!**	**ja**	**min of meer**	**nee**	**Nee!**
8	**Er zijn voldoende mensen met wie ik me nauw verbonden voel**	**Ja!**	**ja**	**min of meer**	**nee**	**Nee!**
9	Ik mis mensen om me heen	Ja!	ja	min of meer	nee	Nee!
10	Vaak voel ik me in de steek gelaten	Ja!	ja	min of meer	nee	Nee!
11	**Wanneer ik daar behoefte aan heb kan ik altijd bij mijn vrienden terecht**	**Ja!**	**ja**	**min of meer**	**nee**	**Nee!**

Appendix C

1	Wat is uw naam en wat voor een werk doet u?
2	Heeft u goed en persoonlijk contact met de meeste van uw clienten?
3	Hoe vaak per week komt u bij een client op bezoek?
4	Doen uw clienten veel in hun vrije tijd?
5	Doen uw clienten mee met sociale activiteiten?
a	Waarom denkt u dat dat is?
b	Hoe vinden uw clienten sociale activiteiten?
6	Heeft uw client wel eens aangegeven dat hij of zij graag iets met anderen wil gaan doen?
7	Hebben uw clienten een telefoon, een computer of een tablet?
a	Waar gebruiken ze die voor?
8	Zou een deel van uw clienten zelf nog activiteiten kunnen organiseren?
9	Merkt u wel eens dat uw clienten eenzaam zijn?
10	Hoe uit die eenzaamheid zich bij uw clienten?
11	Weet u hoe uw clienten om gaan met deze eenzaamheid?
12	Wat vind u het leukste aan uw werk?

Appendix D

Informatieblad voor onderzoek 'activiteitenoverzicht voor ouderen'

Doel van het onderzoek

Dit onderzoek wordt geleid door Bart Sprenkels. Het doel van dit onderzoek is om een activiteitenoverzicht te ontwikkelen speciaal voor ouderen.

Hoe gaan we te werk?

U neemt deel aan een onderzoek waarbij we informatie zullen vergaren door:

- U te interviewen en uw antwoorden te noteren/op te nemen via een audio-opname. Er zal ook een transcript worden uitgewerkt van het interview.
- U een vragenlijst voor te leggen welke u schriftelijk kunt invullen
- Observatie.

Uitsluitend ten behoeve van het onderzoek zullen de verzamelde onderzoeksgegevens worden gedeeld met ECare Innovatie te Hengelo. Hier zal het product worden ontwikkeld.

Potentiële risico's en ongemakken

- Er zijn geen fysieke, juridische of economische risico's verbonden aan uw deelname aan deze studie. U hoeft geen vragen te beantwoorden die u niet wilt beantwoorden. Uw deelname is vrijwillig en u kunt uw deelname op elk gewenst moment stoppen.

Vergoeding

U ontvangt voor de deelname aan dit onderzoek geen vergoeding

Vertrouwelijkheid van gegevens

Wij doen er alles aan uw privacy zo goed mogelijk te beschermen. Er wordt op geen enkele wijze vertrouwelijke informatie of persoonsgegevens van of over u naar buiten gebracht, waardoor iemand u zal kunnen herkennen.

Vrijwilligheid

Deelname aan dit onderzoek is geheel vrijwillig. U kunt als deelnemer uw medewerking aan het onderzoek te allen tijde stoppen, of weigeren dat uw gegevens voor het onderzoek mogen worden gebruikt, zonder opgaaf van redenen. Het stopzetten van deelname heeft geen nadelige gevolgen voor u of de eventueel reeds ontvangen vergoeding.

Als u tijdens het onderzoek besluit om uw medewerking te staken, zullen de gegevens die u reeds hebt verstrekt tot het moment van intrekking van de toestemming in het onderzoek gebruikt worden.

Wilt u stoppen met het onderzoek, of heeft u vragen en/of klachten? Geef dit dan aan tijdens het interview. U mag ten alle tijden stoppen.

Contact

Mijn mailadres: **bart.sprenkels@gmail.com**
Het mailadres van mijn supervisor: **w.dhollosy@utwente.nl**

Handtekening: _____

Naam: _____

Datum: _____

Appendix E

1	**Er is altijd wel iemand in mijn omgeving bij wie ik met mijn dagelijkse probleempjes terecht kan.**				
	Ja!	ja	min of meer	nee	Nee!
2	**Ik mis een echt goede vriend of vriendin.**				
	Ja!	ja	min of meer	nee	Nee!
3	**Ik ervaar een leegte om me heen.**				
	Ja!	ja	min of meer	nee	Nee!
4	**Er zijn genoeg mensen op wie ik in geval van narigheid kan terugvallen.**				
	Ja!	ja	min of meer	nee	Nee!
5	**Ik mis gezelligheid om me heen.**				
	Ja!	ja	min of meer	nee	Nee!
6	**Ik vind mijn kring van kennissen te beperkt.**				
	Ja!	ja	min of meer	nee	Nee!
7	**Ik heb veel mensen op wie ik volledig kan vertrouwen.**				
	Ja!	ja	min of meer	nee	Nee!
8	**Er zijn voldoende mensen met wie ik me nauw verbonden voel.**				
	Ja!	ja	min of meer	nee	Nee!
9	**Ik mis mensen om me heen.**				
	Ja!	ja	min of meer	nee	Nee!
10	**Vaak voel ik me in de steek gelaten.**				

	Ja!	ja	min of meer	nee	Nee!
11	**Wanneer ik daar behoefte aan heb kan ik altijd bij mijn vrienden terecht.**				
	Ja!	ja	min of meer	nee	Nee!

Appendix F

Reden voor opnemen is minder schrijven. Beide stemmen in. Mevrouw merkt op dat ze dit kent wanneer ze een overweging moet opstellen voor de kapel. Dan zou ze graag dingen willen inspreken. Ze vraagt of zo iets aangeschaft kan worden. Ze heeft geen smartphone.

Hobbies van mevrouw: tuinieren, lezen, koken, bakken, zelf brood bakken (doet mevrouw dagelijks. Kon het even niet doen in nieuwe appartement, maar toen er een oven kwam deed ze het gelijk weer). Meneer haalt vaak brood van de lidl, waarop mevrouw zegt dat ze er vaak ook noten, zaad, uien, olijven en allerlei kruiden in haar brood doet.

Meneer en mevrouw hebben beide de tijd voor het interview, maar voor 3 uur moet het GFT bakje weggebracht en meneer moet nog boodschappen doen. De GFT bakjes worden met bakfietsen opgehaald. De meesten in een appartement hebben een klein GFT bakje.

Bent u getrouwd (geweest)?
Mevrouw is eerst 35 jaar alleen geweest als wijkverpleegkundige. Daarna is ze bij een pastoor als huisgenoot geworden en maakte ze dus deel uit van een parochie. Daar deed ze alles. Huishouden, maar vooral tijd nemen voor mensen die aan de deur kwamen. Dit heeft ze 35 jara gedaan. Toen is de pastoor overleden. Ondertussen heeft ze verpleegkundige opgepakt. Nooit getrouwd geweest, want met een pastoor trouw je niet. Opgeleid in Nijmegen, daarna in Zutphen, daarna kaderopleiding, wijkverpleegkundige opleiding.

Intermezzo over Jan de Blok (buurtzorg). Als mevrouw ooit zorg nodig heeft, dat kan in de toekomst want ze is in de 80, wil ze zorg van buurtzorg.

Meneer heeft een samenlevingscontract. Al 20 jaar. Daarvoor was hij getrouwd, maar dat is al lang geleden. Meneer heeft geen kinderen, maar zijn vriendin heeft 3 kinderen, een zoon is al overleden. Nog een dochter en zoon. Die komen 2 a 3 keer in de week eten en dan gaan ze in het weekend ook wel eens mee weg. Meneer en mevrouw hebben beide testament al geregeld. Vinden ze erg belangrijk.

Doet u veel samen met andere mensen? Vrienden en familie? Meneer: woensdag morgen zwemmen, inmiddels al een groep opgebouwd. Gaan altijd na het zwemmen in wierden naar almelo naar de kringloop. Ze gaan met zn 4en en zijn ook al vaak met die groep op vakantie en naar musea geweest. Dat is altijd heel gezellig.

Mevrouw: via de werkgroepen als vrijwilliger uit de kerk heeft ze heel veel contacten. Naast de vergaderingen bezoekt ze veel mensen. Als vrijwilliger bezoekt ze ook veel mensen. Ze heeft ook veel sociale contacten omdat ze daar mee in contact gekomen en daar houdt ze dan contact mee. Ze zit ook in de katholieke bond van ouderen. Verschillende bijeenkomsten, uitjes en vieringen. Volgende week is er een lunch in oldenzaal georganiseerd. Ze zijn al een keer naar een gevangenis in drenthe geweest voor de geschiedenis. In Veenhuizen. En natuurlijk

ook met familie maar die wonen allemaal ver weg. Oud en nieuw broers en zussen (9 kinderen). Met verjaardagen ook. Dan gaat ze reizen met de auto (haar hobby). Dat vind ze heerlijk, ze rijdt al 55 jaar. Ze rijdt meestal alleen. Ze haalt mensen op die zelf niet kunnen rijden. Kent u automaatje? Ja dat ken ik, mooi initiatief. Opgericht door de anwb. Leuke naam.

Meneer heeft hier veel vrijwilligerswerk gedaan. Bevalt uitstekend. Even gepraat over zwembaden. Openbaar vervoer: mevrouw hoopt dat het in de toekomst meer gebruik gaat worden. Veel bussen rijden helemaal leeg. Mevrouw gaat bijna nooit met openbaar vervoer. Ze heeft een treinabonnement voor 7 dagen. Dan gaat mevrouw zo ver mogelijk weg. Meneer denkt dat dat binnenkort ook afgelopen is. Je moet op de pc al van te voren invullen waar je heen wil en dan moet je rechtstreeks. Ouderen reizen minder omdat ze via de computer dingen moeten regelen. Er zijn nog steeds mensen die geen computer heeft. (omstander van rond de 25 zegt dat niet alleen ouderen geen computer hebben). Meneer heeft geen verstand van computers maar internetbankieren is geen probleem. Mevrouw heeft bankieren ook in de bibliotheek geleerd. Mevrouw vertelt dat het erg makkelijk is om via de computer geld over te maken. Meneer oppert kerstkaarten sturen via de post, en dat doet mevrouw ook nog steeds. Net als verjaardagskaarten. Dat is veel persoonlijker. Meneer zegt dat hij een smartphone heeft waar hij mee kan appen, maar mevrouw heeft geen telefoon waar ze mee kan appen.

Op dit moment heb ik beide gevraagd om een lijst in te vullen over sociale contacten. Ik heb ze niet van te voren ingelicht dat het over eenzaamheid gaat. Meneer heeft hem zo eerlijk mogelijk ingevuld maar herhaalt 3 keer dat hij er zelf van schrikt. Meneer vraagt zich af waar het voor is. Meneer zegt dat hij er toch wel last van heeft. Zijn vriendin heeft het lastig en is depressief. Gesloten. Onverwachts kan je er niet thuis komen dus meneer kan nooit mensen spontaan uitnodigen. Daar heeft hij echt wel veel moeite mee.

Mevrouw denkt dat ik meer in de richting moet zoeken naar contact onder mensen onder elkaar. Dat mensen niet contact willen hebben via de website maar echt persoonlijk. Misschien zelfs 1 op 1 contact. Je moet mensen bij elkaar brengen en iets bieden (kopje koffie) dan kunnen ze lekker praten. En van het 1 komt het ander. Ze kunnen met leuke dingen beginnen en later ook.

Een overzicht met activiteiten waar mensen zich aan kunnen melden zou kunnen werken om mensen samen te brengen. Er zijn ook mensen die aan huis zijn gebonden. Dat is een hele grote groep. In zo'n geval zijn huisbezoeken erg populair.

Mevrouw gaat heel weinig naar websites. Alleen als ze het nodig heeft. Maar verder eigenlijk niet. Ze gaat wel naar websites als ze al weet dat de website bestaat. Meneer zoekt nog wel eens hoe hij beginnen moet met dingen. Hij heeft een brede interesse. Als voorbeeld zegt hij dat hij wel eens in de krant leest over een website en dan bezoekt hij die website op de computer. Mevrouw gaat naar websites als het in haar interesse is of in haar belang. Als ze het nodig heeft. Verder gaat ze weinig naar websites. Als er in een artikel of een krant naar verwezen wordt in een onderwerp wat haar zeer interesseert dan zou ze het wel doen. Daar komt alleen niet zo veel van omdat ze teveel andere dingen te doen heeft.

Meneer heeft iedere dinsdag vrijwilligerswerk. Soms zegt hij dat af om naar de Nivon te gaan als er een interessante lezing is. Er zijn daar ook veel eenzame en alleenstaande mensen. Kost 3 euro en dan heb je koffie erbij en al. Dat is voor iedereen te doen.

Appendix G

- Buurtzorg:
  Geen fam, slecht te been, vergeetachtig.
- Dorp vs Stad. Dorp is wat hechter, stad minder sociale cohesie.
- Iedere client is anders, je kan niks van te voren bepalen. Niet bij iedereen hetzelfde.
- Kijken naar omstandigheden. Mensen kunnen blind zijn, slecht te been.
- Trend dat iedereen maar thuis zou moeten blijven wonen. Ouderen voelen zich dan genoodzaakt om thuis te blijven wonen. Dit kan ook zeker een effect hebben op eenzaamheid.
- Verpleegkundige student: ouderen kunnen angstgevoel krijgen. Stofzuigen en huishouden wordt steeds zwaarder. Financien steeds lastiger. In de winter worden dagen korter.
- Mensen geven niet snel aan dat ze eenzaam zijn. Als je als verpleegkundige bij iemand thuis komt kom je er snel achter door vragen te stellen. Je kan het ook zien aan de mensen: ze gaan zichzelf slechter onderhouden. Blijven in de pyjama. "Je kan het soms zelfs ruiken".
- Activiteiten kan helpen: contacten, regelmaat, je gaat niet alleen er naar toe. Een oude man ging elke week biljarten en voetbal, dit stopte in de zomer. Hij was heel blij dat het weer begon.
- Drempel: alleen naar activiteitein.
- Voorbeeld van tienermoeders, taxi, mensen hebben soms een duwtje nodig. Als je ze allemaal ophaalt en thuis komt brengen gaat het soms makkelijker.
- App niet te moeilijk maken.
- Peter Paul Verbeek lecture volgen.

Ochtend: ouderen moeten dingen vaak horen om het op te slaan. Alles moet duidelijk en gestructureerd zijn om over te komen. Grote tekst is een pre. Dingen die herkenbaar zijn werken beter. Iemand zei dat het niet altijd goed is dat alles zo complex wordt. Meer functies is niet altijd beter!

De ouderen werden nagebeld om te vragen of ze nog kwamen.

Vroeger wilde ouderen leren over technologie, tegenwoordig moeten ze wel! Dingen moeten nu via het internet.

Ouderen klikken met ogen

Middag:
Ouderen kunnen heel tech savvy zijn. Problemen verschillen enorm. Informatie knoppen bij tekst net als belastingdienst. Overzicht voor centrale activiteiten is wel nodig. Ouderen gaan

niet snel naar een link die ze niet kennen. Als ze hem aanbevolen krijgen door vrienden of familie werkt dat beter. Een app moet je downloaden en is daarom wat enger.

Observatie: Ouderen klikken heel snel en heftig op knoppen. Iemand moet ze soms aan het handje nemen om alles uit te leggen.

Regelmaat is belangrijk.

Appendix H

Login screen:

Overview selection:

A Web Page

https://www.senioractief.nl

Senior Actief

🔒 Inloggen   Mijn Account   Contact   Over ons

Hoofdpagina   Activiteiten   Veel gestelde vragen

Verander tekstgrootte: A A A

Senior Actief brengt u een overzicht met activiteiten bij u in de buurt. Hierdoor is het niet nodig om stad en land af te reizen voor een activiteit die u via ons heeft gevonden. Om de juiste activiteiten te bekijken kunt u hieronder uw postcode of plaatsnaam invullen. Daarna kunt u een overzicht bij u in de buurt selecteren.

Vind een overzicht bij u in de buurt.

bijv. 7551 EJ of Hengelo   Zoeken

Momenteel zijn wij in 23 dorpen en steden actief

Of kies een overzicht uit onze lijst:

Plaatsnaam	Provincie	Aanmelden
Enschede	Overijssel	Klik hier
Hengelo	Overijssel	Klik hier
Glanerbrug	Overijssel	Klik hier
Almelo	Overijssel	Klik hier
Hengevelde	Overijssel	Klik hier
Markelo	Overijssel	Klik hier
Losser	Overijssel	Klik hier
Wierden	Overijssel	Klik hier
Overdinkel	Overijssel	Klik hier
Lichtenvoorde	Gelderland	Klik hier

⬅ Pagina 1 van de 5 ➡

https://www.senioractief.nl

Senior Actief

🔒 Inloggen   Mijn Account   Contact   Over ons

Hoofdpagina   Activiteiten   Veel gestelde vragen

Verander tekstgrootte: [A] A A

Filter Activiteiten

Categorie
- ☐ Sport en Bewegen
- ☐ Lunch en Diner
- ☐ Creatief
- ☐ Vrijwilligerswerk

Regelmaat
- ☐ Maandelijks
- ☐ Wekelijks
- ☐ Eenmalig

Omvang Activiteit
- ☐ Eén op één
- ☐ Groepsverband

Samen breien bij de breiclub

Kom iedere dinsdag gezellig breien in het Roombeek. Het is niet erg als je een beginner bent.

- ✋ Creatief
- 📅 Wekelijks
- 👥 In een groep

Meldt u aan als Schrijfmaatje

Als Schrijfmaatje heeft u regelmatig per brief of mail contact met iemand anders.

- ✉ Anders
- 📅 Wekelijks
- 👤 Eén op één

Doe mee met Old-Star lopend voetbal

Walking voetbal is voetbal waar rennen niet is toegestaan. Dit is een leuke en populaire manier om toch nog

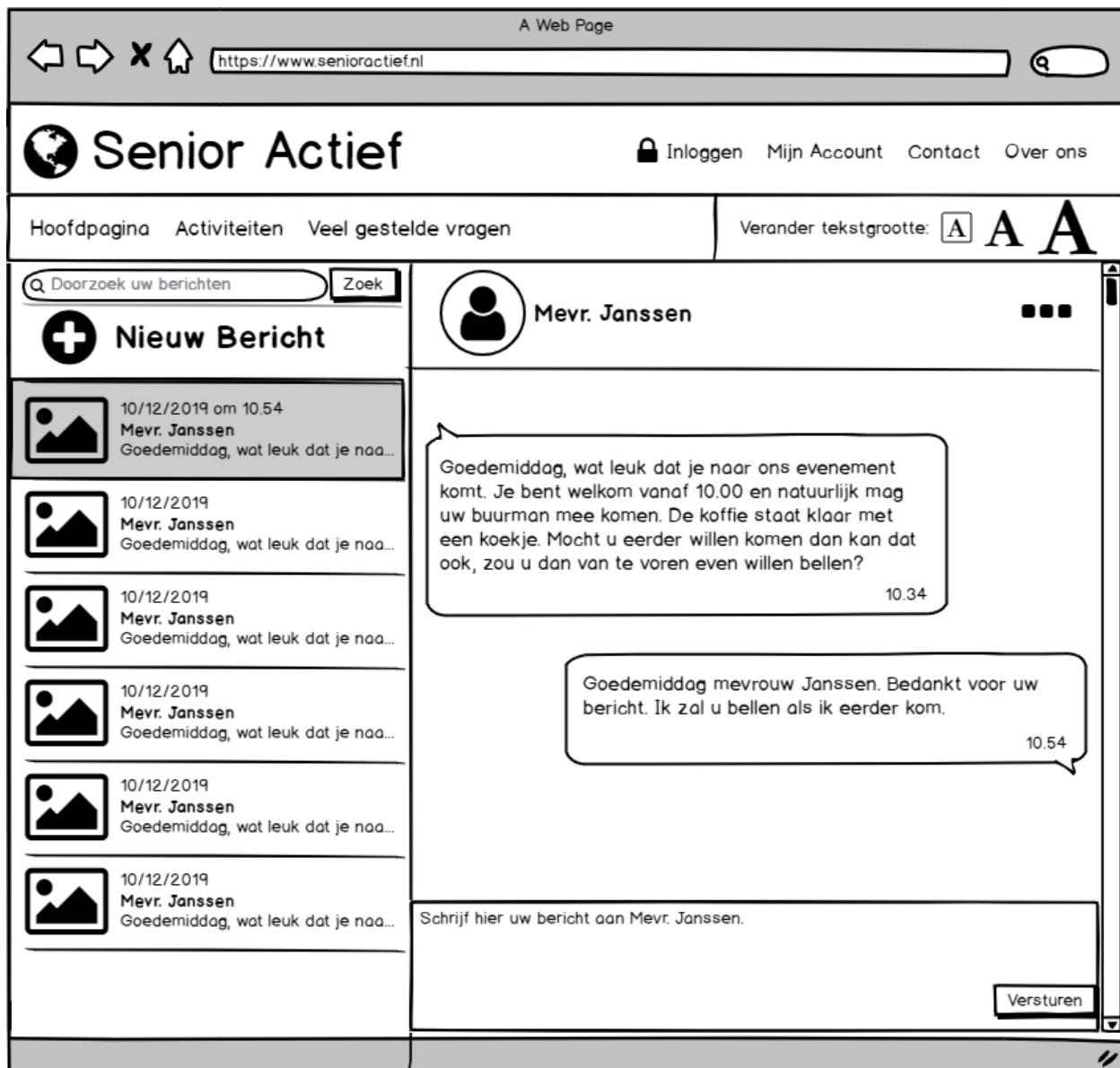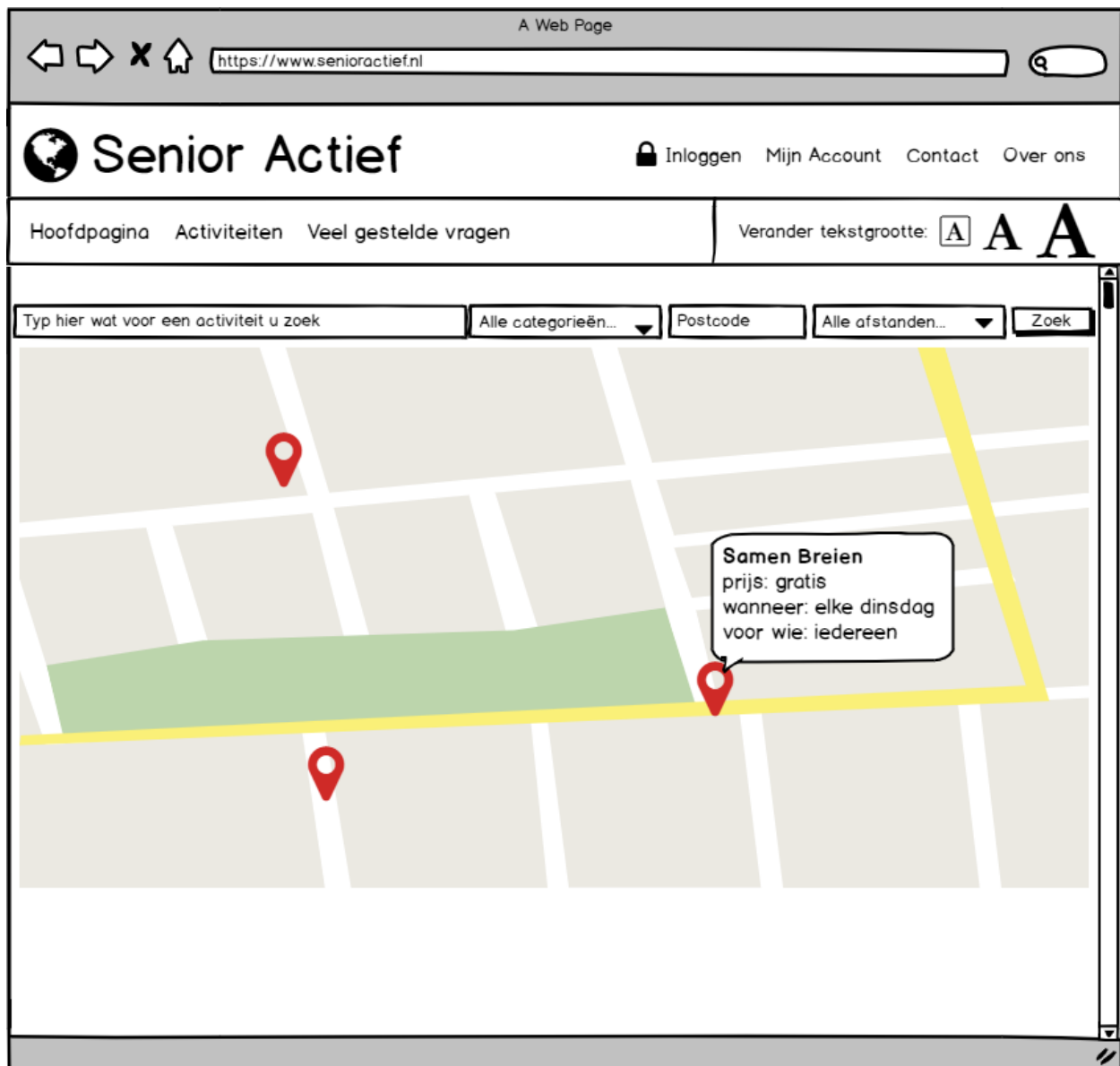- ⚽ Sport en Bewegen
- 📅 Wekelijks
- 👥 In een groep

Activity screen:

Appendix I

Activity overview:

Messaging screen:

Map:

https://www.senioractief.nl

Senior Actief

🔒 Inloggen   Mijn Account   Contact   Over ons

Hoofdpagina   Activiteiten   Veel gestelde vragen

Verander tekstgrootte: A A A

Samen breien 🖶

Klik hier om u aan te melden

Informatie
Datum:
iedere dinsdag
Tijd:
Van 10.00 tot 11.00
Locatie:
Wijkcentrum Roombeek

Roombeekseweg 70
7512 AB Enschede, Overijssel
Prijs:
Deze activiteit is gratis

Toegankelijkheid
Deze activiteit is ook toegankelijk
voor mensen met een rolstoel,
rollator en wandelstok

Contact
Deze activiteit is ook toegankelijk
voor mensen met een rolstoel,
rollator en wandelstok

Deelnemers (10/15)
Er zijn nog 5 plekken vrij.
✉ Dhr. M. Boerman
   Mvr. G. de Bree
✉ Mvr. H. C. van der Vecht
✉ Dhr. F. Appelscha
   Dhr. G. Veen
✉ Dhr. B. Sprenkels
✉ Mvr. J. Boshuizen
   en nog 3 anderen

Meer informatie over deze activiteit

Wie organiseert deze activiteit

Klik hier om u aan te melden

Neem contact op met de de organisatie

Lidie de Haan
Telefoonnummer: 06 85947383
Email adres: lidiedehaan@gmail.com
Klik hier om snel een berichtje te sturen

Contact page:

A Web Page

https://www.senioractief.nl

🌐 **Senior Actief**   🔒 Inloggen   Mijn Account   Contact   Over ons

Hoofdpagina   Activiteiten   Veel gestelde vragen   Verander tekstgrootte: [A] A **A**

Neem contact met ons op

~~~~~~
~~~~~~
~~~~~~
~~~~~~
~~~~~~
~~~~~~

Uw naam:
[   ]

Uw mailadres:
[   ]

Typ hier uw bericht:
[   ]
[   ]
[   ]
[   ]

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Login screen:

A Web Page

https://www.senioractief.nl

Senior Actief

🔒 Inloggen   Mijn Account   Contact   Over ons

Hoofdpagina   Activiteiten   Veel gestelde vragen

Verander tekstgrootte: A A A

Inloggen op uw account

Gebruikersnaam: [   ] ℹ

Wachtwoord: [   ] ℹ

Klik hier als u uw gebruikersnaam of wachtwoord bent vergeten.

[Log in]

Heeft u nog geen account?

Als u nog geen account heeft kunt u hier een nieuw account maken. Een account is geheel vrijblijvend. Mocht u benieuwd zijn hoe wij met uw gegevens om gaan dan kunt u dit lezen in onze privacy policy.

Hulp bij het inloggen

Stap 1: vul uw gebruikersnaam in

Stap 2: voer uw wachtwoord in

Stap 3: Klik op "Log in"

Appendix J

Summary of second evaluation session.

Introductie van mijn afstudeeropdracht.Reden voor mijn afstudeeropdracht.

Meneer geeft gelijk een compliment. Knap dat ik dat zelf gemaakt had.

Is het overweldigend?
Het is eenvoudig en duidelijk. Icoontjes nodigt uit. Meneer denkt dat het kaart icoontje een routeplanner is. Mevrouw 2 vraagt waar de linkerbalk voor is, dit is dus mogelijk niet zo duidelijk. De filterbalk heeft vrij veel uitleg nodig voor ze hem helemaal snappen.

Wat vindt u van de activiteiten pagina?
Het schrift is wat klein. Kan je dat zelf vergroten? Dan moet kunnen namelijk. In het algemeen kan dat vaak niet, en dat is erg vervelend.

Hoe belangrijk is het om contact op te kunnen nemen met degene die het organiseert?
Heel belangrijk. Vaak staat er een email, website en telefoon. Dan heb je 3 opties dat is heel fijn.

Hoe nemen jullie contact op met iemand?
Meneer: altijd telefoon. Als er een nummer staat dan bel ik. Mevrouw 1: Ik doe beide. Als ik iemand ken dan bel ik even. Mevrouw 2: Ik mail meestal, dan heb je geen voicemail. Ik vind de voicemail bloedirritant. Waarom dan? **Ik mis de bevestiging want ik weet niet of ze hem gehoord is.**

Hoe belangrijk is het om contact op te kunnen nemen met andere deelnemers van te voren?
Mevrouw 2: Nee, dat vind ik niet kunnen. Mevrouw 1: Zou kunnen, dan kunnen we afspreken om samen te gaan. Maar liever niet. Privacy is belangrijk. Ik geef gebruikers de optie om hun naam op de lijst te kunnen zien. Nadat ik het heb uitgelegd is er meer begrip voor.

Ik wil mensen de optie geven om aan te melden zonder een account te maken.
Mevrouw 2: Jaaaa heel graag! Mevrouw 1: Nee, ik zou echt geen account maken. Ze krijgen allemaal gegevens van mij, daar heb ik geen zin in. Mevrouw 1: Ik heb dan ook weer een nieuw wachtwoord en daar heb ik geen zin in.

Vinden jullie het belangrijk om te weten wat andere mensen vonden van een activiteit?
Ik kijk er altijd wel naar als het er bij staat. Mevrouw 1 vind het niet nodig.

Dit gaat over het messaging scherm:
Ik ben wel voor mensen een bericht kunnen sturen. Om berichten te sturen moet je een account hebben. **Meneer zegt dat hij niet zo goed is in berichten sturen. Hij weet niet wat hij schrijven en zeggen moet. Hij heeft ook moeite met de woorden correct spellen.**

Daarom vind ik het ook belangrijk dat je meerdere opties hebt om zelf te kiezen hoe je contact met iemand opneemt. Meneer zou dus zeker baat hebben bij een soort autocorrect als je contact op neemt met anderen.

Wat vindt u ervan als u van te voren al weet wie er nog meer aanwezig zijn bij een activiteit zodat u al iemand kent.
Een aanspreekpunt is altijd handig. Het is fijn om naar iemand toe te kunnen lopen als je aan komt. Of je kunt er bij gaan zitten. Dat verlaagt een drempel omdat je al weet wie al komt.

Ik heb ook de toegankelijkheid er bij gezet.
Ohhh dat is heel belangrijk, heel belangrijk. Vooral bij senioren. Ik zou bijna zeggen het is een vereiste. Informatie of over de deur zelf open gaat is ook fijn.

Ik vind het goed en belangrijk om mijn telefoonnummer en mailadres achter te laten als ik mij aanmeld voor een activiteit. Zeker omdat je je gegevens achterlaat bij een betrouwbare plek.

Inlog pagina:
Ik vind het heel handig dat er uitleg bij staat. Meestal krijg je alleen maar het inlogschermpje. Ik ben het nog nooit ergens tegengekomen waar dan ook, en ik vind het heel handig. De mailtjes waarmee je je wachtwoord reset is vaak heel onduidelijk.

Wat kunnen drempels zijn om niet naar een activiteit te komen?
Ze moeten zich welkom voelen. Het moet bereikbaar zijn met ov, en er moet voldoende parkeergelegenheid zijn. Dat is heel belangrijk. Je moet niet een kwartier moeten lopen om vanaf de bus naar waar je moet zijn te komen. Bereikbaarheid is een must. **Een ander punt is de toegankelijkheid van het gebouw zelf. Informatie als een lift, automatische deuren, op welke verdieping is het.**

Zouden jullie zelf iets organiseren?
Ja, dat zou ik wel doen. Kortgeleden dacht ik, goh die suggestie ga ik een keer doen. jaren geleden hadden ze een spelletjesmiddag en al jaren is er geen spelletjesmiddag.

Appendix K

Ria Stoelkampe

age: 68
residence: Hengelo, Overijssel
education: Finished highschool
occupation: Worked as a shopkeeper
marital status: Married but widowed

I bake my own bread every evening and have done so for 30 years

Every morning I get up around 08.00 and start my day by reading the newspaper. Whenever I need to do some groceries I do them before 14.00 and I spend the rest of my day either reading, doing chores at home or distribute meals to the elderly as voluntary work. I do this three times per week.

Comfort With Technology

INTERNET
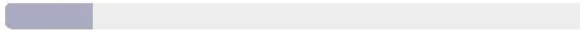
SOFTWARE

MOBILE APPS
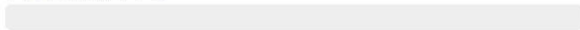
SOCIAL NETWORK

Criteria For Success:

My social circle used to be very large, and we used to drink coffee together all the time. If I have spend some time with a person I have not seen in a while my day brightens up. Getting somewhere myself gives me a feeling of success and control.

Needs

- Because I walk with a cane, I need to know how far to walk beforehand
- I would like to express my opinion but not in public for the world to hear

Wants

- I want to feel in control of my day
- Picking up gardening in the future
- Eat dinner at 17.30

Values

- Honesty
- Taking care of other people in your community

Fears

- I used to love gardening but I can not do that anymore since I had to move into an apartment
- I fear not being able to do the chores by myself

Wim Olde Nijheuvel

age: 74
residence: Haaksbergen, Overijssel
education: Mechanics
occupation: Retired car mechanic
marital status: Married

When asked to write something, Wim chose to write the word "grandkids"

When I was about 30 years old I founded a volleyball association. That was back in the days. Nowadays, I live together with my wife, but she starts to get Alzheimer. I look forward to the day when my grandchildren come and visit us. We used to drive to Utrecht often, but it is too far for us now. Currently, my days are rather empty. Most of the time I am reading or going through old photos as I am trying to get them organized. I would like to get out of the house more often but something is keeping me from doing so.

Comfort With Technology
INTERNET

SOFTWARE

MOBILE APPS
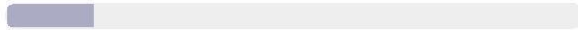
SOCIAL NETWORK
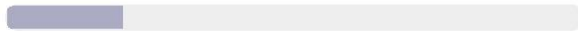
Criteria For Success:
I like to do things, I used to be busy with a project all the time. Therefore, simple things like going fishing with my grandchildren makes me feel satisfied.

Needs
- I do not see anything without my glasses. Therefore, big letters is a must for me. Reading can take up a lot of effort.
- To come prepared, I need to be able to ask questions to someone who organizes an event. If I can not do this, I often do not attend.

Wants
- I hate feeling alone whenever I am somewhere I have not been before, I always want to know at least one person beforehand.
- As an older adult we get a couple of train trips from the government. I love to plan my trip and go as far away as possible.

Values
- Clarity is important to me
- Being on time
- Dressing for the occasion
- Honesty

Fears
- I struggle with meeting new people, as I often do not know what to say.
- Typing is a problem for me as I can not find the right words and struggle with spelling the words correctly. I prefer using my smartphone to type and Whatsapp with my children as it provides suggestions and corrects my spelling mistakes.

Appendix L

Login screen remarks

Zijn er elementen op dit scherm die u mist?	Zijn er elementen die u overbodig vindt?	Heeft u verder nog opmerkingen over dit scherm?
Nee	Nee	Nee
Nee is m.i. Overzichtelijk	Nee	Ik zou een strakker lettertype gebruiken, aangezien bij ouderen het lezen meer inspanning kost
Een link naar de voorwaarden. Dat is nl iets anders dan de privacy policy.	Nee	Kleur doet veel
Nee	Nee	Nee
een (korte) beschrijving die me vertelt waarom deze website voor mij interessant is, waarom deze website er is, zodat ik een reden heb om een account te gaan maken en in te loggen. Misschien is dat zichtbaar achter de kopjes Activiteiten of Veel gestelde vragen, maar dat kan ik nu nog niet zien.	nee.	het scherm oogt enigzins saai, door bijvoorbeeld meer gebruik van kleur, en of fotos, zou de pagina er aantrekkelijker uit gaan zien.
	Nee	Een goede simpele uitleg is bij veel ouderen van belang. Zaken moeten makkelijk te vinden zijn.
Extra beveiliging met een Verificatie-code die naar je mobiel is verzonden en deze in te vullen bij een extra veld op het scherm	Wanneer je niet ingelogd bent, mogen een aantal menukeuzes zoals "mijn account" weg gelaten kunnen worden. Ze hebben nog een functie als je nog niet ingelogd bent.	Nu te grijs en eentonig. Meer kleuren combinatie en grafische symbolen gebruiken .

privacy voorwaarden	nee	komt wat simpel over
nee	beetje vol scherm, oogt misschien beter op een volledig scherm	nee
Nee, maar dat zou bij gebruik wel eens naar voren kunnen komen	Nee	Hou het lettertype strak ivm ouderen die slechter kunnen lezen
Nee , helder	Ik kan lettergrootte op allerlei manieren instellen nodig? 55 + van nu is vaak geen digibeet	Kleur saai,
nee	nee	waarom een scherm dat senior actief heet. het stigmatiseert. activiteiten waar ik aan mee wil doen moeten niet alleen voor senioren zijn. Verder vindt ik het scherm en de volgende schermen die nog worden getoond behoorlijk oud bollig. ik zou niet zo snel hier activiteiten op zoeken.
Nee	Nee	Nee
Nee	Nee	Ik zou me niet op deze manier aanmelden
Bingo sjoelen		
Nee		Nee
Te klein kan het niet lezen.	Nvt	Te klein op mijn telefoon.b
Hoe kom ik aan een gebruikersnaam en waaruit moet dat bestaan, voor welke lokatie/stad/ dorp is deze website?	Nee	Nee

Ik zou op de landingspagina/startpagina direct interessante activiteiten laten zien. De inlog is minder belangrijk. Mensen moeten eerst een reden hebben om een account aan te maken, je moet het ze lekker maken met goede content.	Te grote inlog	
Nee	Nee	
Ik wil niet eerst inloggen of een account maken om te kunnen zien welke activiteiten er zijn	Hulp bij inloggen voegt geen informatie toe	Nee

Activity overview

Zijn er elementen op dit scherm die u mist?	Zijn er elementen die u overbodig vindt?	Heeft u verder nog opmerkingen over dit scherm?
Nee	Nee	Nee
Nee	Nee	Nee
Nee	Nee	Denk aan spelling (zoekt i.p.v. zoek) Wees consequent (lopend voetbal / walging voetbal)
Spelletjes, bv biljarten, kaarten, enz	2x schrijfmaatje	Zie vorige vraag
1: Ik kan aan deze pagina niet zien waar ik binnen de website nu ben. Ik neem aan op de Activiteiten pagina.	Ik ben op dit scherm niet ingelogd. Wat zijn voor mij er de voordelen van om in te loggen?	Het is een eenvoudig scherm, en daardoor overzichtelijk.
Duur van de activiteit. Misschien ook nog te zoeken op dag of dagdeel.	Nee	Nee

Duur van de activiteit in uren.	Bij de prijs staan "van" en "tot". "Van" is overbodig omdat niemand zal erg vinden als de prijs lager is dan je hebt ingeven bij "van" prijs	Reviews mogelijkheid. Top x activiteiten. Aanbevelingen aan de hand van je gedrag en/of eerdere deelnames van activiteiten.
nee	nee	nee
ziet er prima uit	nee	nee
	Ja, niet 2x dezelfde activiactivifeit	
Niet direct, ik kan niet doorklikken	Lettergrootte	Saai
Nee nee		
		In dat gedoe met inloggen zou ik geen zin hebben.
Nee		Nee
Te klein scherm	Te klein scherm	Te klein scherm
Nee	Nee	Nee
Nee	Nee	Nee
Misschien dat je hier de toegankelijkheid bij kunt vermelden? Als je een lokatie niet kent weet je niet hoe makkelijk de entree is, gelet op krukken, rollator ed	Nee	Mooi duidelijk
Zoeken op postcode of plaatsnaam en dan een straal van x km	Nee maar de zoek knop staat op een onlogische plaats	Het staat bol van de spelfouten

Messaging screen

Zijn er elementen op dit scherm die u mist?	Zijn er elementen die u overbodig vindt?	Heeft u verder nog opmerkingen over dit scherm?

Nee	Nee	Nee
Nee	Nee	Nee
Nee	Nee	Nee
Nee	Nee	Nee
Aan dit scherm zou je willen kunnen zien dat je ingelogd bent, en onder welke naam.	nee.	Het is me niet duidelijk met wie ik hier allemaal berichten kan uitwisselen. Is het met anderen die zich hebben aangemeld voor een aktiviteit waar ik me ook voor heb aangemeld? Is het met iedereen die een account op de website heeft? Is er een context (een specifieke activiteit bijvoorbeeld)?
Nee	Nee	Denk aan GDPR
nee	nee	nee
nee	nee	nee
		Ziet er nu vriendelijk uit maar hoe bewaak je teksten/vervelende berichten
Nee	Zie hier voor	Saai
Nee nee		Nee
		Ik hou nk niet dat ik geschikt ben voor contact op deze manier Zou er geen tijd voor hebben vanwege mijn huidige bezigheden.
Nee	Nee	
Te klein		

Nee	Nee	Nee
Nee	Nee	Nee

Activity screen

Zijn er elementen op dit scherm die u mist?	Zijn er elementen die u overbodig vindt?	Heeft u verder nog opmerkingen over dit scherm?
Nee	Nee	Nee
Nee	Wellicht de namen van de deelnemers ivm privacy ?	Nee
Nee	Nee	Nee
Nee	Nee	Nee
nee	nee	het is een wekelijkse activiteit, als ik me aanmeld, is dat voor iedere week? - Als ik al aangemeld ben, kan ik dat dan op deze pagina zien? Kan ik me hier ook afmelden?
Nee	Nee	Is overzichtelijk
Nee	Namen van deelnemers	Denk aan GDPR
nee	nee	nee
bij contact staat ook de toegankelijkheid?	2 keer contact info	nee
	Contact en toegankelijkheid zijn dezelfde tekst	
Nee	Nee	Nee
Nee	Nee	Nee
		Ik zou ze niet l ern omdat ik geen behoefte heb aan andere

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		contacten.
Nee	Te veel informatie	Niet overzichtelijk
Nee	Weet niet	Nee
Linkje naar de locatie (kaartje)		
Nee	Nee	Eigenlijk staat hier al beschreven wat ik hiervoor bedoelde!. Mooi, duidelijk denk een prima pagina
Contactgegevens. Komt wordt wel genoemd maar daar staat info over toegankelijkheid	Namen van deelnemers. Denk niet dat dat toegestaan is ivm privacy wet	Een button naar ov9292 of zoiets zou handig zijn om te kunnen bepalen of je er wel kunt komen op de tijd dat de activiteit begint

Contact page

Zijn er elementen op dit scherm die u mist?	Zijn er elementen die u overbodig vindt?	Heeft u verder nog opmerkingen over dit scherm?
Nee	Nee	Nee
Nee	Nee	Prima
Het tekstvak moet rechts onderin dubbeltjes te krijgen waarmee je het tekstvak kunt vergroten.	Nee	Nee
Nee	Nee	Nee
een telefoonnummer met tijden waarop ik kan bellen, (ik wil liever bellen dan berichten typen)	Als ik al ingelogd zou zijn, heeft het geen zin om nog apart mijn naam en email adres te moeten intypen.	een knop om het getypte bericht te versturen ontbreekt.

Waarover je contact kunt opnemen.		Welk doel heeft de contactpagina?
Categorieën van de vragen.	Als je ingelogd bent, is het invullen van de naam en e-mailadres overbodig	Nee
nee	nee	kan het niet lezen
nee	nee	nee
		Aan wie schrijf je dit bericht , is er een contactpersoon ?
Nee , allemaal standaard	Nee, zie hier voor	Ik zou het allemaal wat minder saai maken. Ik ben bijna 60 maar vind het meer voor mijn moeder wat is je doelgroep?
Nee3	Nee	Nee
Waar kun je contact over opnemen	Te veel tekst	Nee
Ja ik wil kunnen bellen niet mailen		
Weet niet	Weet niet	Nee
Verzend knop en annuleren/terug knop. Indicatie welke velden verplicht zijn.		
Telefoonnummer misschien		
En telefoonnummer om contact op te nemen. De meeste ouderen bellen liever dan dat ze mailen	Nee	Waarom zijn er 2 knoppen om naar je account te gaan? Inloggen en mijn account zou 1 kunnen zijn

Appendix M

Database structure created to be used when the prototype is translated into a functioning website.

activities
activity_id
person_id
date
time_from
time_until
location_city
location_street
location_postalcode
location_name
category
frequency
price
accessibility
info_summary
info_activity
info_organiser
featureImage
bannerImage

role
person_id
activity_id
role

categories
activity_id
category

users
person_id
first_name
last_name
sex
date_of_birth
email
phoneNumber
profileImage