

INF5261 - Final report

Paddlefoot

*mechanisms and boundaries for building social connections &
trust in the digital age.*

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1 Introduction

Nearly a third of Norwegian households own a dog or a cat, most commonly in families with children (SSB, 1994). Families, and people in general, tends to live busy lives where smaller tasks like walking your dog four times a day might not be accomplishable on a daily basis. This phenomena is known as ‘time squeeze’ (Wikipedia, 2016). Our assumption is that many dog owners are in this boat together and could therefore use help with walking their pet from time to time, or perhaps they need to find a dog sitter when they are on vacation. In any case, we want to make an app that connects dog owners, who need help with either walking or sitting their pet, with other dog owners in their neighbourhood for shared responsibility and mutual benefit.

1.1 Our Concept

Our app, Paddlefoot, is an app where a dog owner can browse for dogs and dog owners within the neighbourhood and choose which dog and owner he wants to connect with. Kind of like how you can use Tinder to browse through humans. When you select a dog you like, the owner gets a notification on her phone regarding the interest. The dog owner can then look up the profile information and ratings of the other dog and owner, and vice versa. Based on their mutual approval, both can initiate a chat and agree on meeting up. We want our app to solve the different scenarios:

1. Dog owner who wants someone to walk his dog from time to time.
2. Dog owners who wants a sitter for their dogs for a longer period i. e. a weekend or when the owner is on vacation.
3. Dog owners who wants to get in touch with other dog owners for mutual benefit where both owners can sit, or walk, each other’s dog in time of need.

1.2 Research question

Early in our project we discovered that how to build trust is one of the largest challenges we faced. Naturally we have focus mainly on questions related to this topic. In addition we had a vision for which gimmick we will use to match dog owners, and we wanted to investigate how the target group

perceive this Tinder-like concept. The last main research question is to what the scope of the app is. Is the app a meetingplace one uses just to make contact and then never uses it again, or is it a tool one can use over a longer period? With our project we wish to answer:

- What would make dog owners feel reassured about their dog's safety while lending their pet to strangers?
- Who is the target group and what do they have in common?
- What manner of feedback (rating) is useful for our users and what motivates users to give feedback.
- How important is payment for our users?
- Will a GPS-tracker increase the feeling of safety? What information can we use from it and how does a sitter feel about being monitored.
- What is the scope of the application?

1.3 Target group

Our app has one target group, dog owners who needs help, and are willing to help other dog owners by walking or sitting each other's dogs. At the start of the project we did not possess any more detailed picture of the user group, and the scope was too large to make a worthwhile app. Therefore, one of our research goals were to investigate who in this large group would be interested in a service like ours. In our initial data collection (chapter 3.1) at Frognerparken we made discoveries on the matter and found out that younger people in their 20s and 30s were generally more interested in this kind of service than older person (50+). Pensionist, who we thought might be a a group to target, showed little to no interest. Most of them liked walking their dog for the exercise and fresh air, and they also had difficulties trusting an app. It is worth noting that we only got in touch with seemingly healthy elderly and the response might have been differently if we made contact with more physically challenged elderly. The same goes for every age group.

Based on the interviews we decided to target younger dog owners aged 20-49 in our project. Within that group we specifically target families with younger children, but also singles and couples in their 20s or 30s who own a dog. People in this range tends to have good knowledge and experience

using apps and smartphones, something that will be reflected by the implementation of the app.

Originally we intended our app to have a secondary target group, dog walkers. Dog walkers were people who did not have dogs themselves, but would like to sit or walk a dog for dog owners. This idea was scrapped after the initial interviews where we found out that two of the issues dog owners had with our service was trust and the experience dog walkers possess. Some would only use such a service if the dog walkers had documented experience with dogs. Therefore we narrowed down our target group to people owning a dog to increase the trustworthiness of our app and assure the users that everyone using the app has at least some experience with dogs.

1.4 Design method choices

In our project we have opted for using the method user centered design, but we are using genius design as well on parts of our app at the start of the project (Bromley, 2011). We have chosen this path because we at the start of the project had an idea of how we wanted our service to look and feel. Nevertheless we have other research questions we want to investigate our self to better cater the needs of the users involved in this app. Therefore we have reviewed similar services such as DogHub and Doggy, but also apps with similar functionality as ours. This includes Tinder and Uber . Our goal is to create a high fidelity prototype and review it with users preferably in a focus group. The main goal of the data gathering is reviewing our concept, further investigate how we can build in functions which increase the feeling of safety and uncover what scope our app should cover.

1.5 Existing Solutions

There are a few services like ours available both in Norway and abroad. Two services which have almost the same functionality as ours are Doghub.dog (Doghub, 2016) and Finnenhundepasser.no (Finnenhundepasser, 2016). Both sites offer similar functionalities. You can either find a dog to sit, or find someone who can sit your dog. The services requires users to make a profile and then they will get access to available sitters or dogs. Doghub is a danish services which is yet to be common in Norway while Finnenhundepasser is norwegian and seems to have tracking with over 12 000 followers on Facebook. There are also lots of pages and groups on Facebook where you as a dog owner

can find a sitter. The issue for most of these services seems to be marketing. Especially DogHub and Doggy seems to be viable service and should be useful for a lot of people, but in our interviews almost none have heard of them. In our initial interviews we were told that in some cases there exists a maternity group for people who buys a puppy, which serves the same purpose as our app. In conclusion there are alternatives available for dog owners, but no other service has exactly the same concept or functionality as our own app.

Tinder

- Matching based on location
- Contact based on mutual approval
- Chatting to get acquainted
- New profile using Facebook

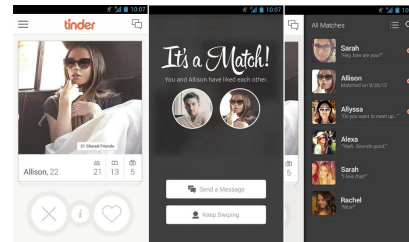


Figure 1: Tinder UI

DogHub

- Dogowner search for Walker
- Booking via Calendar
- Individual pricing
- Rating (not in use)
- Manuel filtering of location of Walkers

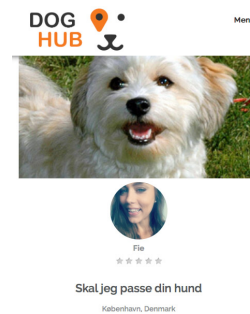


Figure 2: DogHub UI

Doggy

- Dogowner search for Walker
- Booking via Calendar
- Integrated pay system
- No ratings
- Manuel filtering of location of Walkers



Figure 3: Doggy UI

2 Literature review

In this part of the article we will review related literature in order to get familiar with other mobile services. We will also look into how different functionalities, i. e. user feedback and social navigation, are perceived by users. At the end we have a reflection upon these kind of applications.

2.1 Social Navigation

To gain trust and a feeling of safety for our users we considered using a feedback system, where users could post feedback about one another. The feedback system we imagined our system could use compares to that used in the CityFlocks article (Bilandzic, Foth & de Luca, 2008). The CityFlocks article presents a case study of a mobile system prototype to lower the existing barriers of access to information about one's surroundings. The article addresses how visitors and new residents can make use of the knowledge and expertise of local residents when gathering information about a new city.

In CityFlocks, user submitted comments, and ratings, turned out to be an extremely valuable source of information. In comparison to other professional sources, the information was seen as reflecting people's uncensored opinions. A drawback was that some items did not have enough entries to give enough information about them.

The main research areas in the CityFlocks article was, however, researching and comparing direct and indirect ways of communication used for social

navigation within a mobile interface. This helps us answer one of our other questions, namely how people would like to communicate with each other, and how each profile is presented in our app. You can read reviews and other indirect social navigational clues about a person and his dog before you want to make a match.

In CityFlocks, indirect communication was widely preferred, while the direct voice link was perceived as being bothersome for the receiving end, and the users was uncomfortable talking to strangers. This was the general perception even though the receivers had agreed to this in advance and possibly could have provided a richer form of communication with information specific to the users needs. Text messaging was seen as an appropriate channel to contact local residences, but only if the request at hand was not to urgent.

The article concludes that indirect communication with user submitted comments is a great way of implementing social navigation into a mobile setting. As our application would be of a more personal matter, we wanted to keep calling as a communication alternative and also implement direct messaging as the main form of communication.

2.2 Collaborative user feedback

In our service we are relying on user generated feedback. Our users should rate each other, both dog and owner, in a way that benefits other users. Thus they collaborate on making a database where it is easier to find matches and rule out unwanted people. How to motivate users to rate one another and exactly what should be rated is vital for the success of this functionality.

The issues faced when creating a mobile service dependent on user feedback was researched by Holone et al. (2008) when developing a prototype of a service named OurWay. OurWay is a navigation service for wheelchair users. The idea is that wheelchair users rate different routes segments through i. e. buildings by either good, uncomfortable or inaccessible in order to create a database over the most effective way to move about. Thus making accessibility information conveniently accessible for unable-bodied individuals. In this paper Holone, and his team, researched whether a collaborative user feedback system is a feasible idea in a navigational application. They had some success with a minimal feedback system that only contained three alternatives. However, Holone's research also uncovered keys of consideration when using collaborative user feedback. One of the things they observed was that some users did not report every obstacle they encountered to the system. Also, the

first users in any given environment gave the most feedback. Lastly, most users were using the service selfishly. They wanted access to other's data rather than providing feedback themselves. These challenges are related to our project as well. We have to find answers on how to motivate users to rate each other in such a way which is meaningful for everyone. In addition we have to find a way to get new users, who have no feedback, to be accepted among others.

2.3 Privacy

Another paper written on the OurWay project is Holone's and Herstad's paper (2010) about privacy boundaries in these kind of application. They believe that privacy is not a static set of rules, but a dynamic negotiation between the user and the system. Privacy in this case is not necessarily about the law, but the experienced privacy in an application. They divided privacy into three boundaries:

- boundary disclosure: what information to reveal and share, and what information to keep for yourself.
- identity boundary: the role of the user. Does the user represents herself, an organization or other forms of groups.
- temporal boundary: the information left behind in a networked system can be interpreted by unintended recipients at a later time, and there is little or no way of controlling the interpretation of information or the context.

The insights this point of view provides is of great importance to our project. During our interviews we tried to uncover what kind of information future users of Paddlefoot needed and were willing to reveal for other users. It turns out that revealing relevant information will not be an issue in our project as the participants in general were not reluctant to give away information. On the contrary, many of them thought that sharing information especially about the dog would increase their feeling of safety. They felt that they needed to give away certain kind of information in order to feel reassured that the dog sitter would be able to take care of their dog. The last two boundaries is not covered in the scope of this project, but is still raises highly relevant questions. For example, will we let companies such as kennels

use our app, and how should they be represented? Also, for the temporal boundary, do we delete ratings a user has provided if said user delete her profile in the application? Again, this is not covered by the scope of this paper, but they are important questions going forward.

2.4 Contexts awareness

If an application like ours could be aware of context, it possibly could provide more and better features. We could for example give the users more relevant information at the best time and place. Although, as Agre writes (2001), activities get less mapped to certain locations. This leads information systems to get a more difficult job figuring out the context of a situation. Simultaneously, with technology wanting better understanding of the users and these more complex contexts, some challenges arises, trying to collect and make use of all this data.

He goes on to describe a capture model of five stages, providing a better understanding of how this can be done. The model provides a method for integrating computer systems into social systems. It consist of:

1. Analysis - The analysis of activities, to a repertoire of atomic elements.
2. Articulation - The making of a grammar that can represent all permitted sequences of action.
3. Imposition - How users are made to do actions corresponding to the grammar.
4. Instrumentation - Parsing the activity.
5. Elaboration - The use of activity records.

But integrating such a system comes at a price. The overhead for sticking to this system may be larger than the gain. One then have to consider the tradeoff between functionality and lowering of the information capture cost.

For our, relatively simple, application, the cost of capturing information may outweigh the gains of potentially new functionality. Agre's model may seem too costly to implement, and that we would go with only capturing rough, heuristic data. And as we don't exactly need too much awareness of context, we could do without.

2.5 Universal Design

In Plos and Buisine (2006) the paper describes a case study of Universal Design applied to mobile phone as a physical device. Usability specifications were based on special needs of people with disabilities. The research group integrated the needs of the visually-impaired, hearing-impaired and elderly people into mock-ups. Their study is grounded on Universal Design recommendation, which specify that a product should not be specialized for any particular population, but may be suitable for most users. “The intent of Universal Design is to simplify life for everybody by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost.”

The target users were defined as The visually impaired to blind people
Hearing impaired to deaf people
Elderly people

In early stages of the project they interviewed a sample of users and conducted scenario-based observations. They met four blind persons, two visually impaired ones, a hard-hearing man, a woman with visual and hearing impairment and two elderly users with slight visual, hearing and rheumatic problems.

The relevance to our project is that our app may well be used by people who are visually and hearing-impaired. The needs analysis of this study is useful to our project, how to relate Universal Design into our own design specification. These considerations are also mentioned in Schulz et al. (2015).

- Text-to-speech, auditory feedback on information appearing on the screen
- Possible for user to change font size
- Luminosity and contrasts
- Visual alerts

Including users with impairments to test the usability of our product would have been ideal, however, this is costly. But important for us when evaluating our design is that we make scenarios for people of different disabilities, hard hearing, impaired sight, color blindness and elderly.

2.6 Sharing economy reflection

Our app can be interpreted as part of the sharing economy movement (Oxford Dictionaries, 2016). Oxford's definition of sharing economy is 'an economic system in which assets or services are shared between private individuals, either free or for a fee, typically by means of the Internet'. In our project we aim to create a service where private individuals can sit each other's dogs either for free or for a fee. Therefore our service fits the definition of the disruptive movement sharing economy represents. In Olivier Blanchard article 'Stop calling it the "Sharing economy". That isn't what it is' (Blanchard, 2015) he discusses that being a part of the sharing economy is not necessarily something to be promoted or applauded. In fact, Blanchard argues that these kind of services are related to piracy and leaves ordinarily, and legit businesses no chance of competing. He states that businesses like Airbnb, Lyft and possibly Paddlefoot evade regulations and legislation conventional companies have to accommodate. As a result the sharing economy businesses outperform traditional companies on price. I. e. using our app is cheaper than using a kennel.

This is a problem for a number of reasons. Firstly it can possibly increase unemployment because kennels pool of customers will evaporate. It creates an lawless marked where there is no protection provided from the government. At last it can also create a bigger marked for black labour. It will be difficult for any authority to assure that everyone who uses sharing economy services pay taxes off their income. At the end of the day tech developers like ourselves have to decide if we want to contribute to this movement or whether or not it is ours responsibility at all. One can argue that it is regulators and lawmakers jobs to regulate these businesses. If this movement continue to increase, there will most likely be some kind of regulation. How can it not be? Imagine all assets and services private citizens can rent out to each other which replaces established companies. Not just kennels and the taxi industry will suffer, but also hotels, gardener, cleaning services and many more will be out work. The government will, and probably should never let this happen. It is fine that these disruptive companies innovate business models, but they should play on level ground with the established ones.

When it comes to tech developers responsibility we believe that we have some responsibility ourselves. That is why one of our research questions is how to make dog owners feel that their dog's safety is intact while using the app. We have to assure that the risk of using our app is minimal for

all parties. This is important not just for our own success, but also for the trustworthiness of our industry as well.

3 Methods

In the chapter we will present two rounds of data gathering we conducted during our project.

3.1 Initial interviews

3.1.1 Goal and participant recruitment

We decided to conduct interviews early in our project in order to address the following research questions:

- What would make dog owners feel reassured about their dog's safety while lending their pet to strangers?
- Who is the target group and what do they have in common?
- What manner of feedback (rating) is useful for our users and what motivates users to give feedback.
- Will a GPS-tracker increase the feeling of safety? What information can we use from it and how does a sitter feel about being monitored.

These questions has great influence for our project going forward and we decided to investigate them as early as possible. In addition to the research questions we were also interested in how often dog owners needed a service like ours in order to get an idea of the market size for our project. For the data collection we used interviews for a number of reasons. Firstly, all we had were assumptions regarding what would make dog owners lend their pets to strangers. To get a sufficient understanding of dog owners we needed something more than questionnaires. We wanted to get under the skin of our target group regarding how to make them feel safe when strangers take care of their pet. That would be more accomplishable with interviews than questionnaires. Even though some of our questions were quantifiable, and were analyzed as such, we decided to conduct interviews to investigate the questions for the data collection.

In order to recruit participants we went to Frognerparken and contacted dog owners in their natural environment. Frognerparken has a large diversity of participants, all from families with pets to pensionist walking their dog. It is a popular park in Oslo and is usually well populated. However, there were a couple of drawbacks choosing this as our location for recruitment. Frognerparken is in a part of town which is considered inhabited with more active people and that might reflect in our answers. Another drawback is that we did not manage to connect with inactive dog owners or dog owners who walk their dog infrequently because of disabilities. Anywho, we did ten semi-constructed interviews with a wide range of possible users of our service. Of those ten two were pensionists, three were families with young children and the rest were dog owners in their 20s and 30s who had the main responsibility of the dog themselves. A decent variety of people albeit we would prefer a larger sample size.

3.1.2 The result

Firstly we found out that there is a potential market for our app. Four out of ten answered that they needed help walking their dog regularly. All were families with young children and single young adults (see chapter 1.2 for more on target group). Two answered they needed help almost every day and preferably at working hours. Furthermore, additional two dog owners had needs for a dog sitter over weekends and vacations. In conclusion, six out of ten had some kind of interest in our app. It is worth noting that none of them were pensionist. The two pensionists in our research used the dog as motivation for exercise and fresh air. Neither of the two would feel comfortable with using our app despite functionality like ratings, review, dog-tracking and contact information to the sitter.

When it comes to what would make dog owners feel reassured about their dog's safety while lending their pet to strangers, there were a lot of different feedback. Some felt the idea was absurd and that none would ever use such a service. To use it would be irresponsible. Others thought the idea was brilliant and could not wait for the app to be released on Google Play or App Store. Even though some were less sceptical they needed some information about the sitter to be willing to lend them their dog. The interview objects were given the chance to come up with ideas to increase the trustworthiness of using such a service before we introduced our own. To our surprise more than one mentioned functionalities like having a Facebook-connection within

the app, get basic information about the sitter, swapping contact information, use peer-reviews and rate each other. These functionalities also built enough trust that most of the pro-our-app-group is willing lend their dog out. Especially the peer-review and rating functionality made dog owners feel comfortable.

We also researched what dog owners opinion were regarding the tracking functionality of the app. Obviously none repelled the idea, but not everyone embraced it either. Once again the pensionists were the most sceptical and did not want to use it. Most were in between and thought it might be interesting for the sake of curiosity, but could possibly also increase the feeling of safety while using the app. Interestingly one participant liked the idea, but said he would never agree to it as a dog sitter. He thought it was too invasive in his private sphere. A problem we have anticipated as well. The tracking function, at least at the state of the initial interviews, were presented as an actual track where the dog owner could see exactly where the walker has been. This function might be voluntarily in the final design or presented in another form if we elect to keep it as a part of the app.

Other takeaways from the interviews is that three of the participants wanted a function in the app which specified whether a walker should walk the dog or be jogging with it. For some it was also a concern where the dog was walked. They wanted to specify accepted location for the walk. Mainly a park or the forest. Most dog owners was open to the idea that a walker could walk more than one dog at the time as long as it were maximum three dogs and the walker had experience doing it. We also asked what means of communication they would prefer for the initial contact with each other. It turns out most wanted chatting over calling as anticipated after reading CityFlocks.

3.2 In depth interview with prototypes

3.2.1 Goal of the data gathering

The focus of the interviews was to get a more in-depth interview of dog owners. We wanted to find out their relation to dogs, what they thought about letting others take care of them and to show our prototype and evaluate the concept. We asked questions about all of our research questions as well.

3.2.2 Method and participants

Originally we intended to arrange a focus group or a group interview where we could get some discussion going. Unfortunately this was not accomplishable in the disposable time frame and we therefore opted to arrange in depth interviews. The method was chosen because we wanted qualitative data and needed to have the ability to ask follow-up questions in order to understand the subjects opinions and relations regarding this theme.

Four adults from our target users were interviewed. Two were interviewed separately and two, a couple, were interviewed together. Of the two first interviews one was a female in her 20s and the last one was a male in his late 40s with children in the 11 to 13 range. The couple were both in their 20s. Two interviews were held at Institute of Informatics at UiO and the last interview was conducted in the home of the subject for practical reasons (time). Each interview lasted for 40min to an hour.

The interviews were conducted in the following manner. We started with a warm-up session, we covered the topics of owning a dog and if they currently used kennel or other services. Thereafter we had a demo and presented our concept by using a prototype (see chapter four). This introduced the main part of the interview. We asked about our research goals by using open questions with follow-ups. We gained insight on their opinions on the concept and furthermore what information was important for them if they were to use it.

3.2.3 The result

In this part we will submit the main takeaways from the interviews. In the next chapter (3.3) we will go deeper into the result and discuss our findings.

First of all we did strengthen our belief that young singles, couples and families with young children were our main target group. Both the couple and the other person in the 20s told us the app might be feasible for them and enjoyed the concept. The older male did not have use for the app himself, but thought his children would enjoy it. One of them enjoyed walking dogs and had walked dogs in the neighbours before. This proposition rely on that it is possible to be a part of the app even though you do not own a dog (more on this later).

Another takeaway from both of our rounds of interviews is that the most common way to get people to sit, or walk, their dog is to hand it over to

family and friends. We experienced a scepticism towards kennels. They were viewed as expensive and it was a common belief that their dog would not thrive being there. Rather obviously all participants told that the dog was viewed as a family member. As such they would never let others take care of their dog without being assured the dog were in safe hands. This was true for kennels and other professional services as well as private citizens.

Regarding how the app could raise the experienced safety, it can only do so much. The general opinion among our users is that there have to be some sort of personal communication for them to let others take care of their dog. Ratings, Facebook-connection and live tracking contributes to the experienced safety, but will not be enough on its own.

3.3 Discussion

In this chapter we we will discuss each of our research questions systematically. The remarks we make in this chapter is based on both round of interviews conducted in our project. At the end of the chapter we will provide a discussion on the marketing of our app.

Who is the target group and what do they have in common?

We have discussed this in some part in chapter 1.3, but will elaborate further. Even the current scope of dog owners we targeted is a very heterogeneous group of people. There are many reasons why people own a dog. Some do it for exercise, other for hunting and some for teaching children responsibility or to have company. Obviously the reason why you have a dog in first place and how you view it affects what you want out of our system. That is why some participants in the interviews wanted some kind of filter in our app. The filter could be about breed and size, but also for type of exercise and environment the owner prefer for its dog to be walked in. For example an interview subject, who used his dogs for hunting, was interested in that his dogs would get good exercise, preferably in a non-urban environment. Other participants were just happy to have anyone sit their dog and type of exercise was not the main priority. Therefore having a filter that single out the dogs and owners by these preferences is a smart move going forward.

What manner of feedback (rating) is useful for our users and what motivates users to give feedback?

For our users a rating system is one of the most important features of the application. In our concept there is not a lot of information to base your decision of whether or not you would like to match with a dog and it's owner. Having peer-review is therefore an important feature. It functions as a job reference, and can provide dealmaking or deal breaking information about the dog or it's owner. Some of the participants in our data gathering also wished the ratings to be more specific than just whether you liked the dog or not. Having information about energy level, obedience and so forth gave users insight on how the experience of sitting/walking it would be, and also provided which qualification they needed to possess to be interesting for the other dog's owner. As we learned from Holone's research about collaborative user feedback there are issues of concern when using this system. The issues relates to motivation and quality of feedback. We believe that having clear questions to answer and maybe making it mandatory to rate the first walk/sit after a match is one promising option.

How important is payment for our users?

At the state our project is currently at, where dog owner meet other dog owners, there is no interest in paying each other for sitting one's dog. At least not for just walking the dogs. Users felt that it was more an exchange of services where both parties contributed somewhat equally. Still, at longer periods i. e. over a week, a smaller payment was anticipated. In our original idea where people did not exchange services, but rather found someone to sit their dog it was implied that some form of payment was in order. Another takeaway on the subject is that very few participants were interested in payment within the app.

Will a GPS-tracker increase the feeling of safety? What information can we use from it and how does a sitter feel about being monitored.

In a word, no. GPS-tracking would for most users not create an increased sense of safety. For them to be safe enough to lend their dog to others they needed to feel safe before giving their dog away. These days there are necklaces with trackers dog owners can equip their dog with if the owner feels so unsafe that he has the need for live tracking. That would be a much more viable option. For the rest of the users the tracking functionality were

viewed as mostly entertainment, but might encourage some users to go for longer walks more often. Extra functionality around the tracking like distance tracking, average speed, time used etc could be used in some form of gamification (badgeville, 2016), but that is another route than what we intended for our app. However, the data collected from a tracking service could be used in the profile as an indication of how experienced a user is. Then again, this will heavily out favor the inexperienced users. As for now we think that having the tracking function as an option and not mandatory is the best way moving forward.

What would make dog owners feel reassured about their dog's safety while lending their pet to strangers?

This has been our main research question throughout the project. So far we have yet to find a clear answer on how this can be solved within an application. One of the in-depth interview subjects stated that it was hard to trust private citizens because of how the juridical system works in Norway. She thought that it was easier to hold companies as kennels accountable if the dog went missing, was mistreated or any other unwanted circumstances should occur. This is one of the reasons why we were interested in trust and safety in the first place. The rating system can make other users aware of these happenings, but is inadequate to fully prevent them, which is what's important for each individual user to start with. This is also the main intention behind the rating system, to uncover unwanted situations. We believe, in contrast to some subjects, that it also has the potential to prevent unwanted situations to some extent. If you want to match with other people and dogs in the future, you are most likely interested in keeping your personal rating as positive as possible. Another safety feature is the mandatory Facebook login. It can raise the bar for creating fake profiles for people with dishonest intentions.

Despite all the safety features both we and the interview subjects have thought of, an app will for most users not be adequate enough to let other take care of their dog safety wise. Most users felt that personal impressions were favorable. They wanted all three parties to spend some time together to see how they all fit together. As one user said: "it is not necessarily about if I trust another person or is afraid that they will not return my dog in the same condition, but rather be reassured if they have the proper skills and experience to manage the dog. So they will not be put in a situation they

can not manage”. It is worth noting that this quote is from a veteran dog owner with two hunting dogs. Still, his opinion raises a valid point. There is already some level of trust involved when letting your relatives, friends and kennels take care of your dog. It is important to keep in mind that we do not get paranoid with how to make our users feel safe. Maybe all we need is to give them a starting point and they will make it on their own from there. Anyhow, it leads to the last research question.

What is the scope of the application?

This question can be divided into two parts. What should, and what should not our application do? According to our interviews it is important to not do too much in an application like ours. They want to use our service as a platform where they can meet other people who can help them with either walking or sitting their dog. And return the favor. The subjects wanted our app to help filter out unserious people as well as making it easier to get in contact with dogs and owners based on certain preferences.

3.4 Marketing. Why there are so few available services like ours.

One aspect we have yet to address in this project is marketing. One thing we learned when analyzing existing services was that they had in general little foothold among the user group. It seems like potential users are unaware of these services and is therefore not using them. Olivier Blanchard (2016) made a post on his website which might be applicable to understand how we can get foothold among our user group. He states that success of services like ours is not necessarily bound to features, but instead he makes a list of points to consider:

- Identify the problem. In our case: people are not using these kind of services.
- Why aren't they using it? In our case: they do not know about it.
- Why do they not know about it? In our case: poor marketing(?).

In addition he wants every business owner to ask themselves: “why does our company/product matter”? These questions is kind of simple and is

not necessarily meant for marketing professionals, but is a well suited as a reflection point. It is a good reflection point not only when things are not working out, as is the case for similar services, but also in the design process. In the case of Paddlefoot, our service matter because you as a dog owner can get help with someone taking care of your dog when you cannot do it yourselves. It is not necessarily the gimmicks of swiping and tracking which will make or break this app, but how well the core functionality works.

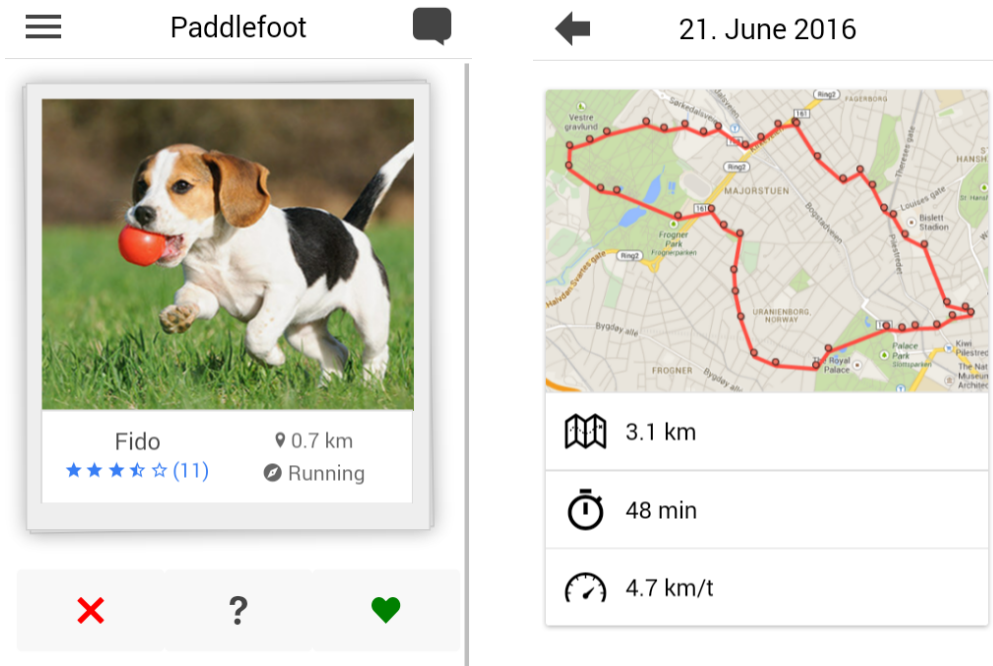
4 The prototype

One part we wanted to do in this project, was making a high-fidelity prototype. Both so we could have something to test and show to potential users, but also to get hands-on experience with app development.

When making our prototype, we started making hand drawn sketches, displaying the application's basic design, layout and function. This process was based off our interviews, articles we had read and our knowledge to similar applications. After we were satisfied with our sketches, we started making a hi-fidelity prototype application, visualizing a few user scenarios. Our prototype was made as a Wizard of Oz-application (Usabilitynet, 2006) providing a good as possible user experience, with clickable regions redirecting the user between a set of screens, simulating how a real app would behave. The application was realized using PhoneGap in combination with the Ionic Framework.

When a user first open our prototype, the user gets presented with a login screen, where one could log in with facebook. After that, a screen for profile creation appears with fields for filling out info about oneself and one's dog. After the registration, the user is presented to a deck of Tinder-style cards (figure 4a). These profile-cards contain a picture and name of a dog, along with rating, distance from yourself and type of activity wanted. It's possible to get more information about the dog, and then either like or discard that card. If the user likes a profile, and that card's user has liked the opposite way, a connection is made between the two profiles.

All connections are visible from the chat-icon on the right-hand side. If one clicks on one of these connections, one gets presented with a chat-window, a link to that person's profile, an option to call that person and a link to a list of all previous trips done in collaboration. These trips can further be viewed in detail, presenting the user with tracking and some stats about



(a) Home

(b) Tracking

Figure 4: Screenshots of prototyoe

that trip (figure 4b). Other functionality includes rating each other with a star-rating and a comment, viewing one's rating and viewing, changing and deleting one's own profile.

5 Conclusion

During our project we mainly focused on three key points.

1. Who are the users, what do they have in common?
2. How can we make dog owners experience adequate safety in our app so they could lend out their dog without much need for interaction outside the app?
3. What is the scope of our app? What functionality should we implement. What should the app do? What do users expect it to do?

These three points is based on our research questions. In the case of the first point we have learned a lot about potential users. Especially their behavior and view towards dogs. Throughout the project we have gone back and forth about if we should add a secondary user, the dog walker. We dropped the idea after our initial interviews because some subjects stated that they would easier trust a person if they owned a dog themselves. By narrowing down the user group we also made it easier to make a targeted app. After the in-depth interviews our view on the subject changed again. If we are to further develop the app, we will keep an open mind about adding the second user. Perhaps conducting a questionnaire to get a bigger sample size might provide a conclusion on the matter.

On the second and third point we conclude that there is only so much we can do in an app. Human trust and experienced safety is a complicated matter it is difficult to capture within an application. Going forward we think that keeping the rating system is vital for the initial trust, but the dog owners needs to come together to build more trust face to face. After all, most dog owners view their pet a member of the family. You would not let someone babysit your children based on some comments in an app, would you? It is the same case for dogs. That being said, it would be interesting to see if what the users said during interviews is what they do in real life.

Anyway, we think our app is best suited for being a meeting place where one can get help to walk or sit one's dog. After the initial contact, the users should meet up and build a trusting relationship outside the scope of the app. After all, our experience with apps tell us that apps are usually better off not trying to solve all too much at once. As Svein Hovde (part-time professor at UiO) used to say: "how we organize ourselves when much is arranged in advance" might be an applicable mindset for the users in our app.

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