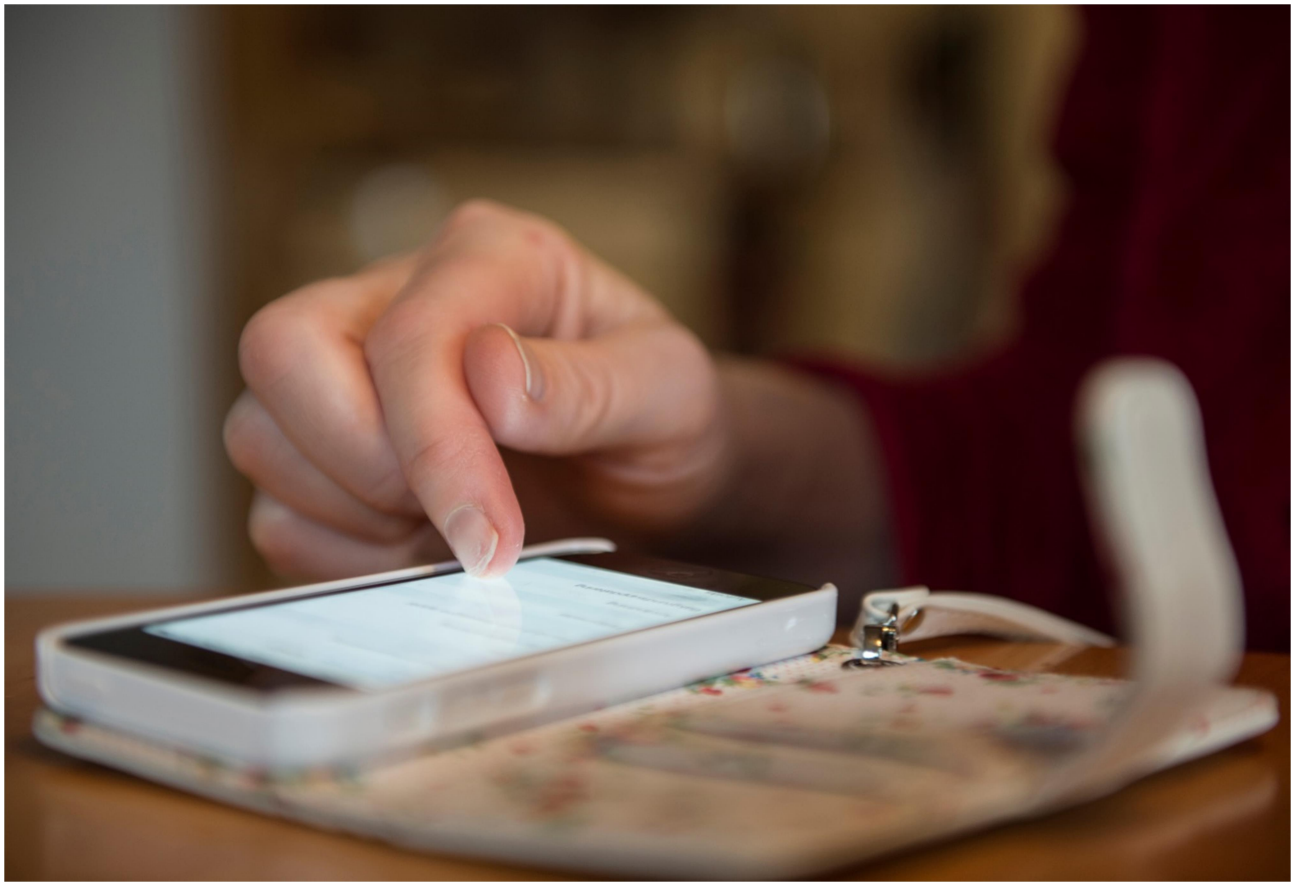

MinForening/DinForening?

-A case study of use and acceptance of a smartphone app

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The Master Program in Techno-Anthropology
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Purpose: This project is a case study that through Social Constructivism of Technology and the Unified Theory of Acceptance and Use of Technology, seeks to understand why some people will accept a technology and why others will not. This is with the aim of being better at understanding what makes a technology successful to its users, or why it fails.

Background: Apps can be an important part of people's life, not just as a source for Facebook, MobilePay or Instagram, but as an important tool when managing chronic illnesses communication with financial institution or the public sector. Many factors come into play, when determining whether or not, people will take to use a smartphone app, and there is a need for reflection and rethinking in the development and design of mobile apps, if and they is to survive in today's competitive market. The case was the app MinForening created by the company MinForening (in English "MyOrganization") a small startup firm, founded by a group of people who are passionate about Danish voluntary organizations (VO's); their mission statement is to make life easier for people participating in voluntary work within different organizations and associations

Methods: the data collection consisted of two interviews with people from MinForening, an interview with two members of the VO TRoA, and a visit to a running club called PGU Runners. The project uses the principle of SCOT to analyze what different social groups there exist in relation to MinForening, then applies the concepts from UTAUT to examine the relevant social group's experiences of the app, as well as the principle of SCOT to analyze what problems each relevant social group's experiences in relation to the app. In the end, this project compares the results from the data collection and analysis, to determine when/why the acceptance/implementation of MinForening has been a success, and when/why it has failed.

Results: The result of the project was that the successful acceptance of the technology by PGU Runners was mainly due to the fact, that the factors effecting user acceptance (from UTAUT) had been positive in their interaction with the app, and that the problems they experienced in relation to the app, were not severe enough to hinder acceptance. Some surprising results was revealed during this project. The first was the importance of individual in the successful acceptance of technology in organizations, and the importance of informant S in initiating the implementation of MinForening into PGU Runners. The second surprising result was the significance of "novelty" in relation to user acceptance of smartphone apps. It was learned from the informants form TRoA, that one of the main reasons they did not see the app as being useful for TRoA, was because the app did not offer any new functions than for example Facebook cannot. In TRoA's case, this could be a way to manage their physical resources.

This project report is non-confidential!

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Abstract - Dansk

Formål: Dette projekt er et casestudie, der gennem Social Constructivism of Technology og Unified Theory of Acceptance and Use of Technology søger at forstå, hvorfor nogle mennesker vil acceptere teknologi og hvorfor andre ikke vil. Formålet med projektet er bedre at forstå, hvad der gør at en teknologi accepteres af sine brugere, eller hvorfor dette fejler.

Baggrund: Apps kan være en vigtig del af folks liv, ikke kun som en kilde til Facebook, MobilePay eller Instagram, men som et vigtigt redskab til styring af kroniske sygdomme, kommunikation med finansinstitution eller den offentlige sektor. Mange faktorer kommer i spil, når man skal forstå hvorvidt folk vil tage en smartphone-app til sig, og der er behov for refleksion og omtanke i udvikling og design af mobile apps, hvis de skal overleve i dagens konkurrencedygtige marked. Casen var app'en MinForening, der er skabt af firmaet MinForening (på engelsk "MyOrganization"), et lille opstartsselskab der blev grundlagt af en gruppe mennesker, der brænder for danske foreningsliv og deres mission er at gøre livet lettere for folk der deltager i og organisere frivilligt arbejde.

Metoder: Dataindsamlingen bestod af to interviews med personer fra MinForening, et interview med to medlemmer fra foreningen TRoA, og et besøg hos en løbende klub kaldet PGU Runners. Projekt anvendte principper fra SCOT til at analysere de forskellige sociale grupper der eksisterer i forbindelse med MinForening. begreber fra UTAUT blev brugt til at undersøge de relevante sociale grupper oplevelser af appen, samt en analyse af hvilke problemer de oplevede i den forbindelse. Hver relevant sociale gruppers erfaringer i relation til appen. Til slut sammenligner dette projekt resultaterne fra dataindsamlingen og analysen for at fastslå hvornår / hvorfor accepten eller implementeringen af MinForening har været en succes, og hvornår eller hvorfor det har mislykkedes.

Resultater: Resultatet af projektet var, at PGU Runners succesfulde accept af teknologien primært skyldtes, at de faktorer der påvirker brugeraccept (fra UTAUT), havde været positive i deres interaktion med appen, og at de problemer de oplever i relation til app'en, ikke var alvorlige nok til at forhindre denne accept. Nogle overraskende resultater blev også afdækket under dette projekt. Det første var individets betydning i den vellykkede accept af teknologi i organisationer og vigtigheden af informant S i implementeringen af MinForening hos PGU Runners. Det andet overraskende resultat var betydningen af "nyt" i forbindelse med brugernes accept af smartphone apps. Det blev erfaret fra informanterne fra TRoA, at en af hovedårsagerne til at de ikke så app'en som nyttig for TRoA, skyldtes, at app'en ikke gav nogen nye funktioner, som for eksempel Facebook kan har på nuværende tidspunkt, som i TRoA's tilfælde kan dette være en måde at styre deres fysiske ressourcer på.

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Problem analysis

Introduction

Denmark is a nation of smartphone users. The use of devices like smartphones is on the rise with 84 percent of all Danish families owning a smartphone as of 2017 (Danmarks Statistik, 2017) and 4 out of 5 Danes in the ages 16-89 using their smartphones to access the internet (Tassy, 2016). Another tendency is the use of smartphones as *disruptive technologies* (technologies that are changing the market faster than existing companies can adapt their own product (Tassy, 2016, p. 8)) and we see this, as smartphones are gradually taking over functionalities from other devises like cameras, GPS and radio (Tassy, 2016). Along with the increase in the use of smartphones, a parallel increase in the supply and demand for smartphone applications (called apps) can be observed, with the total number of aps available in the app store Google Play currently topping just above 3.700.000 available apps as of march 2018 (AppTornado GmbH, 2018)

But even with the increasing number of available smartphone apps worldwide, free or paid, the market appears to be nearing its saturation point, with the term "app fatigue" used to describe a decrease in the download an use of mobile apps in contrast to the increase in available apps in stores (Darrow, 2016) (James , 2017) (Kafka, 2016) (Schippers, 2016). For example in the US market in 2016, the increases in app-downloads only grew six present, in contrast to a 24 percent growth in apps being launched (James , 2017), with some media outlets declare that "*The app boom is over!*" (Kafka, 2016) and how *"App fatigue is as much an issue with the consumer as it is with the developer*", the problem being how to differentiate one specific app, in a market with millions of choices (Schippers, 2016). This suggest that there is a need for reflection and rethinking in the development and design of mobile apps, if and they is to survive in todays market.

Companies like Mobtimizers (mobtimizers, u.d.) and AppBrain (AppTornado GmbH, u.d.) have specialized in advising how app developers can best market their product and optimize sale. Organizations like FDIH encourages their members to utilize mobile apps in their marketing strategies (Willemoes, 2016). There certainly is a focus on how companies can promote and marketing their app, but the perspective of the users and what mechanism can result in whether people will accept or adapt the app, are much less in focus when regarding the success of mobile apps. Apps can be an important part of peoples life, not just as a source for Facebook, MobilePay or Instagram (Franck, 2017) but as an important tool when managing chronic illnesses (Iversen, 2014) (Sundhed.dk, 2018), communication with financial institution or the public sector, which will become possible with the new Nem-ID for smartphones from March 2018 (Kjemtrup ,

2018). With so many different apps, which fulfil various functions in the daily life of the users, it is relevant to take into account the user perspective, when developing smartphones app.

Many theories deal with the mechanism behind user acceptance of technology and investigate the factors from a user perspective, including The Technology Acceptance Model (Marangunic´ & Granic, 2015) and the Unified Theory of Acceptance and Use of Technology (Venkatesh, et al., 2012). These theories can help investigate what factors will lead to technology being accepted by the user, and lead to and understanding of how to create better apps in today's competitive market.

Initial wondering

The challenges as mentioned above in regards to mobile app and their usage, lead to the following initial speculations:

1. How can you include the perspective of the user in development of smartphone apps?
2. How can you make an app that people will use?
3. What makes people accept or reject your apps?

How can you include the perspective of the user in development of smartphone apps?

When it comes to app design and design of technology in general, there are many theories and methods on how to involve the users in development of technology. User Innovation Management (UIM) (Bertelsen & Kanstrup, 2011) and Participatory Design (Simonsen & Robertson, 2012) are both theory and methods on who to involve the intended users of a technology in the design process of said technology, in order to ensure that the needs and wishes of the user will be taking in to consideration (Bertelsen & Kanstrup, 2011) (Simonsen & Robertson, 2012).

UIM is a method for how to facilitate and understand user-driven innovation. It also offers tools and techniques to assist with the user-innovation process. (Bertelsen & Kanstrup, 2011)

Through activates like workshops, interviews and prototyping, the facilitator of the user-innovation process seeks to gather input from the users, explore visions and to sketch concrete design ideas, based on users input (Bertelsen & Kanstrup, 2011).

In Participatory Design (PD) the users actively contribute to the design process and in contrast to other theories of design, the users are considered more than mere informants with information which can be extracted by the designers; they are co-creators, actively engaged in the design process, and their input are view as equally important compared to the designers and developers in the making of a technology. PD aims to establish collaboration between user and designer, as well as other relevant groups (users, developers, designers, investors etc.) will result in a more democratic design process, and this approach PD argues, will benefit society on a larger scale. (Simonsen & Robertson, 2012)

This way of thinking in relation to innovation and design of technology is very much aligned with the philosophy behind Critical Theory of Technology (Feenberg, 2002), which seeks to ensure that technology are not created in a way that is democratic and which does not affect the users of the technology in and subjugating manner (Feenberg, 2002).

Critical theory of Technology aims not just to define what technology are, but to question why a technology is a certain way, what factors determined its design, and what other interpretations a technology might have taken (Feenberg, 2002).

These aforementioned principles can be transferred to apply to the design of smartphone apps, resulting in apps that, from the perspective of Critical Theory, can be considered good.

How can you make an app that people will use?

The idea behind theories like UIM and Participatory Design is that when technology is developed in collaboration with the intended user, the users will end up adopting the finished product (Bertelsen & Kanstrup, 2011) (Simonsen & Robertson, 2012).

Other factors as well, can come into play, when determining whether or not, people will take to use a smartphone app. Hedonic-motivation (Lowry, et al., 2013) and Motivational design (Lewis, 2014) are both examples of how to design apps for smartphone, with the objective of getting the users motivated to use a specific app. These theories have their root in psychology, and aims to help explain human behavior and why user will be favorable towards certain kinds of design.

Further factors are notions of Perceived Usefulness, Perceived Ease of Use which are a part of the Technology Acceptance Model (TAM) (Davis, 1989) (Marangunic´ & Granic, 2015), which suggest that the users perception of the usefulness of a technology in carrying out their jobs, as well as the importance of how easy the users *think* the technology will be to master (Davis, 1989).

The Unified Theory of Acceptance and Use of Technology (UTAUT) includes other aspects like performance expectancy, effort expectancy, social influence, and facilitating conditions when analyzing the acceptance or rejection of technology by the users (Venkatesh, et al., 2012)

The factors regarding user acceptance of technology, will be discussed in later chapters of this report.

What makes people accept or reject your apps?

One thing is to design an app with the intent of getting people to use it, another perspective is the mechanism behind whether the intended user accepts the technology or ends up rejecting it all together.

Many theories and methods, deals with the challenges regarding the acceptance or rejection of technology by people. An example is Theory of Planned Behavior, the Motivational Model, or the Technology Acceptance Model (Venkatesh, et al., 2003). These different theories offers help explain and investigate the factors affecting the acceptance or rejection of a certain technology by the users. These factors ranged from behavioral psychology, attitudes towards the technology in question, complexities, long-term consequences, and facilitating conditions in relations to technology (Venkatesh, et al., 2003).

Another way to analyze the reasons of technological failures or successes is with the theory of Social Construction Of Technology (also called SCOT) which as well as a being a theoretical framework offers a method with steps and principles for analyzing technological development and design (Pinch & Bijker, 1984)(Pinch, et al., 1993). The methods of SCOT is about analyzing the different social groups in relation the a technology in order to find out what problems and conflicts each groups experienced in relation to the app, and then finding solutions to those problems and conflicts in order to achieve “stabilization” or “closure” of the technology in question (Pinch & Bijker, 1984) (Pinch, et al., 1993).

A Case Study of app development

MinForening

MinForening (in English “MyOrganization”) is a small company, founded by a group of people who are passionate about Danish voluntary associations and organizations; their mission statement is to make life easier for people participating in voluntary work within different organizations and associations (Kokkedal, 2018) (MinForening, u.d.).

To help achieve this, MinForening have developed an app meant for smartphones and tablets together with a web based platform (currently under development) for voluntary organizations, instructors and mem-

bers. The idea sprung from the founders own experience with voluntary work, and the challenges they had each been facing at one point or another in regards to management and organizing of voluntary work and organizations, with goal to gather all information in relation to an organization in one place (Kokkedal, 2018) (MinForening, u.d.).

The App can be said to have three areas of application; the organizations, the instructors and the members.

From the organizations point of view, the aim to accomplish the following:

- Overview of all the activities within an organization across sports and activities.
- Sign-up an invite members to activities like practice, meetings and events.
- Unlimited numbers of members, groups and organizations.
- Import of members via the web based platform.
- Synchronizations of activities with the organization website.
- Get an overview of all the different sports and activities within an organization.

(MinForening, u.d.)

The member perspective of MinForening can be summoned up as following:

- Receive notifications about our organization and related activities
- Register or deregister on activities, events etc.
- Communicate with instructors, teams, organizations or other members.
- One overall overview of all our organizations and related activities.
- Synchronization of your activities with your personal calendar.

(MinForenig, u.d.)

As an instructor or coach, MinForening wants to contribute with:

- Unlimited numbers of participants and teams.
- Invitations of teams though link or import via the web based platform.
- Color coded activity wheel for easy overview.
- Create and invite participants to activities in 15 seconds.
- Synchronization of your activities with your personal calendar.

(MinForening, u.d.)

The current implementation process of MinForening starts with a contact to an organization or association interested in using MinForenings. This contact is either established by the people of MinForening talking contact to organization they deem relevant, or the organizations themselves contact MinForening, having heard of them from somewhere else. If the organization is interested, MinForening will come to their location to present the app and answer whatever questions there might be in relation to MinForening. This meeting is often held with the board members of the organization in question, since they are the ones who can decide whether or not to implement MinForening on an organizational scale. After this initial meeting, and if the organization is interested in implementing the app, a new meeting will be set up with the instructors or coaches. Here the voluntary Organization (VO) are presented to the app and if the organization is interested, MinForening will help them register their members in the app and send out an invitation to the additional members to join the app.

Is MinForening a good app?

Now to return to the question on how to make a good app, and whether or not MinForening can qualify as such.

MinForening was developed in collaborations with different organizations how provided input and inspiration into the need of and organization in regards to a planning app, as well as what functionalities MinForening should include in the app (Kokkedal, 2018).

The involvement of these organizations, complies well with the philosophy behind Critical theory of Technology, where involvement of users in the development of any technologies, apps included, ensures that the finished technology is constructed in a democratic and non-oppressing manner for the people who eventually will be using the technology (Feenberg, 2002).

MinForening has also utilized the methods of User Innovation Management and Participatory design in the further innovation of their app. In spring 2017 MinForening entered collaboration with four 8th semesters student of Techno-Anthropology from Aalborg University (Gunnleyg, et al., 2017). The purpose of this collaboration was: …"*to investigate how involvement of users can provide insight that can be converted into tangible design ideas, in the development of a digital resource management system for voluntary organizations (VO's) in Denmark*." (Gunnleyg, et al., 2017, p. 2)

In this project, the student contacted the roleplaying organization of TRoA located Nørresundby, which MinForening had previously approach to see if they were interested in using their app. However the app in

its current form, did not offer anything that TRoA did not already have through other technologies. Thus the app was not implemented in TRoA. (Gunnleyg, et al., 2017)

The semester project focused on how the app could become a relevant tool for TRoA, as well as an analysis of the current technologies that TRoA utilized when managing their organization and activities. Two workshops were conducted with members of TRoA participating, with the first workshop focusing on what kind of technologies TRoA were currently in use in TRoA, and the second workshop focusing the needs and wishes of TRoA in the innovation of the existing app (Gunnleyg, et al., 2017).

The result of the project was a series of design principles, which in the autumn of 2017 resulted in a review and redesign of some of the features in the app, resulting in new designs and functionalities.

Another result of the project was the need for a digital resource management system, to help TRoA organize and manage their psychical resource like rooms, tools, board games, costumes etc. MinForening recognized that this could be a need in other organizations as well, and resulted in further collaboration on of the students, who entered an internship as a part of the 9th semester in techno-anthropology. (Holland, 2018)

This aim of this project was to design a digital resource management system in collaboration with the members of TRoA, using the principles of User Innovation Management (Bertelsen & Kanstrup, 2011) and Participatory Design (Simonsen & Robertson, 2012).

Two workshop were organized, with the first workshop focusing on getting input and suggestion to functionalities and design, which was in turn, made into a set of paper prototypes that the members of TRoA could comment on at the second workshop. (Holland, 2018) The digital resource management system in currently in the process of being made into a digital prototype, which will allow for selected organization to give feedback on the design and functionalities. The goal is to test the design in many different organizations, in order to adapt a wide variety of Danish voluntary organizations.

The innovation and making of the digital resource management system with the involvement of the users as active participants in the design process, further establish the fact that MinForening, can be considered a “good” app, as least in regards to the principles of critical theory of technology , User Innovation Management and Participatory Design (Feenberg, 2002) (Bertelsen & Kanstrup, 2011) (Simonsen & Robertson, 2012).

Do the intended users of MinForening want to use the app?

The end result of the 8th semester project was that MinForenings app in its current form was of no use for TRoA mainly because of issue with usability in the design and the lack of new technological solution to TRoAs existing problems with planning and management of activities. (Gunnleyg, et al., 2017)However during the 9th semesters project, it became evident that the addition of a resource management system to the app (combined with a web bases solution), would offer the members of TRoA something that any if there other technology they used instead, could not, and by then MinForening could be relevant for TRoA to use a their main planning and organizing tool, but as of this date (February 2018) TRoA has yet to implement MinForening in their organization (Holland, 2018).

However other organizations do use MinForening when planning, managing and organizing their respective organizations with great satisfaction, as is evident but the testimonials on MinForenings website, where sounds: "*We previously used e-mail a lot, were you often have to search for how have responded whether they are coming or not. Now we exclusively use MinForening, and that means that I easily can check to see if a team is short of players."* (MinForening, u.d.)

Another testimonial state: "*MinForening has given us a great overview of our activities. At any time, a co-ordinator can see how have signed-up for a specific activity*." (MinForening, u.d.)

The section above illustrate a problem, that are very familiar to the people of MinForening became evident during the 9th semester internship, where it was learned that *after the initial implementation process, some organizations will adapt and use MinForening in their everyday activities, but some will never get started on using the app even after the implementation process, and MinForening is very curious to learn why this is sometimes the case.*

What makes the users of MinForening either accept or reject using the app in their organization and/or everyday life?

This leads to the next initial wondering, about what factors makes the intended users of MinForening either accept or reject the app. In the section it is shown that some organizations uses MinForening and find it to be a useful tool to manage and plan activities, but it is also evident that some users do not adopt MinForening as a tool even after the initial implementation process have been made by the people of MinForening. This is at great cost for MinForening who put in time and resources visiting organizations all over Denmark, which will have been wasted effort if the adoption of the app in the organization in question is not a success.

It can also be argued, that investigating what makes people accept or reject the app, can lead to further innovation and improvement on the app, which would in turn benefit the users.

Problem statement

Based on the initial wondering and analysis of MinForening as a case for studying app development, the following problem statement was formulated:

"This project is a case study that through Social Constructivism of Technology and the Unified Theory of Acceptance and Use of Technology, seeks to understand why some people will accept the app MinForening and why others will not."

With the problem statement and the scope of the project in place, the next step was to formulate some additional research question, to help guide this project in answering the problem statement:

1) Use the principle of SCOT to analyze what different social groups there exist in relation to MinForening.
2) Use the concepts from UTAUT to examine the relevant social group's experiences of the app.
3) Use the principle of SCOT to analyze what problems each relevant social group's experiences in relation to the app.
4) Compare the results from research question 1-3, to determine when/why the acceptance/implementation of MinForening has been a success, and when/why it has failed.

Philosophy of Science - Social Constructivism

This project adopts the social constructive approach to scientific research, with the outset in the article *Constructivism as a Theoretical Foundation for the Use of Technology in Social Studies by* Doolittle & Hicks (2012), the article *Objectivism versus Constructivism: Do We Need a New Philosophical Paradigm*? by Jonassen (1991) and the chapter *Social Constructivism in Classic and Modern sociology* by Rasborg (2013) featured in the book *Scientific Theory in Sociology*.

Social constructivism is characterized by the argument that the "reality is experienced by people and by such is a result of interpretation determined by a certain perspective, which in turn shapes and defines the reality that are experienced by the individual (Rasborg, 2013). (Doolittle & Hicks, 2012). This can all be summoned up in the following quote: "*The adoption of these assumptions changes the nature of the social studies from one of a search for truth, to one of a search for perspective."* (Doolittle & Hicks, 2012). This also means that constructivism diverts from the traditional positivistic scientific theories which searches for "truth" and acknowledges that knowledge and "truth" is constructed based on personal and social experience

The problem statement of this project deals with the rejection or acceptance of technology by people, and therefor the focus is very much on the experience of these people and how they influence the technology in question. In order to answer the problem statement, there is a need to find a theoretical framework, that can help explains people's behavior towards technology. It is important to clarify this project perspective in relations to knowledge production and scientific research and this is done by answering the following questions by Doolittle & Hicks (2012):

1) What counts as valid knowledge?
2) What counts as existence and/or reality?

(Doolittle & Hicks, 2012)

Whit these two questions answered, it will be easier to determine which methods will be most suited to answer the problem stamen.

What counts as valid knowledge?

The first question is in regards to the epistemological outset of this project or what, in relation to this project and the scientific research conducted, and is considered valid knowledge.

The social constructivist perspective is, that all knowledge is a result of individual experience, and the cultural, social and historical understandings of that individual (Doolittle & Hicks, 2012).

Another perspective is, that scientific knowledge is influence by the social factors surrounding the scientific research process and that and the knowledge obtained by research is and interpretation made individually and will thereby to some degree, be individualistic in nature (Jonassen, 1991).

This projects epistemological outset can be summon up in these three sentences:

- Our knowledge of reality is constructed on the basis of our own experiences.
- Scientific research is conditional upon the social factors surrounding the research process.
- There is not one *right* way to conduct qualitative research.

What counts as existence and/or reality?

This project adopts the ontology of social constructivism and thereby views reality as constructed by individuals based on both personal and social experiences. The consequences of this is the realization that humans as individuals cannot come to know objective reality in any meaningful way. (Doolittle & Hicks, 2012)

Another perspective of reality from the social constructive perspective is formulated by Johansen (1991) in this quote: "*Constructivism does not preclude the existence of an external reality; it merely claims that each of us constructs our own reality through interpreting perceptual experiences of the external world.*" (Jonassen, 1991)

Whit onset in these two quotes, this projects ontological outset can be summoned up in the following sentence:

- Realty happens in the mind of the person how interprets it.
- An external reality exists, but how it is perceive by people differ based on each individual's interpretation of it.

The main point here being that people have different interpretation of the external reality, which is based on their own experiences of it.

Consequences for the project

The ontological and epistemological perspective of this project, are significant in relation what kind of knowledge is a results of this project, and whether or not the end result can be reproduced by other re-

searcher. By adopting the ontological and epistemological of social constructivism in this project, it is recognized that the results of this project are relative to the social factors surroundings the research process, meaning the researcher own experience and perspective, as well as the experience and perspective of the informants. As a result, other researcher may reach very different conclusion following the same research process or even using the same data. (Rasborg, 2013)

The projects ontological and epistemological perspective are also important when choosing the methods of data collection, but this will be explained in the methodology section later on.

Social Constructivism of Technology

Social constructivism of Technology (SCOT) is an extension of the theory of Social constructivism, with a focus on technology as a social construction, where its design and meaning is shaped by the people who are affected by it, as well as a method for explaining why some technologies are successfully adapted in society and why some fail. SCOT also focusses on all the different social groups that can bed related in one way or another to a technology, along with the opinions and attitude of these social groups towards the technology. (Pinch & Bijker, 1984)

Within the realm of SCOT, there are some key concepts, to help explain the way people and technology influence and shape each other.

These are:

- Technological frame
- Relevant social groups
- Interpretative flexibility
- Design flexibility
- Problems and conflicts
- Stabilization

In the following section, each concept will be explored and their relevance to this project will be explained.

Technological frame

The term technological frame is defined by Pinch & Bijker in the following sentence: "*The concept of technological frame refers to the ways in which relevant social groups attribute various meanings to an artifact*." (Pinch & Bijker, 1984) This means, that a technology can have different meaning to different groups of people, since in accordance to social constructivism the interpretation of a technology is based on individual experiences (Doolittle & Hicks, 2012).

The technological frame can be used to investigate the relationship between technology and social environment in which it exists. This relationship is mutual meaning that as much as the technology is shaped by the social environment; social environments can be shaped by existing technology (Pinch, et al., 1993)

In relation to this project, the term technological frame can be seen as the object of the investigation, since the project is investigated the opinions and attitudes towards MinForening by different people, it can be said that the project investigates how different users constructs the technological frame of MinForening.

Relevant social groups

One of the most important concepts of SCOT is the term *relevant social groups*. SCOT and social Constructivism have root the Marxist worldview, but unlike Marx, it is not the belief that western society is locked in a conflict between workers and the so-called bourgeoisie, but that the struggle is between many different social groups and actors (Pinch, et al., 1993). Technology and technological development have created a new conflict, where on one side large corporations, research and development organizations define and regulate the use of technology (Pinch, et al., 1993). On the other side are the users and consumers how are subjected to the technology, and as Pinch, et. al. (1993) describes: "…*whose needs and aspirations are manipulated by the technocrats who run the large concerns.*" (Pinch, et al., 1993, p. 87)

A social group can be both various cooperations and organizations, together with organized or an unorganized groups of individuals, what is important is that they share a technological frame regarding a certain technology (Pinch, et al., 1993).

As a part of this project, one of the main tasks is to identify the different social groups that can be linked to MinForening.

Here is a list of the relevant social groups that where identified initial to the data collection:

- MinForening – The Corporation
    - Staff – people working at MinForening
    - Developers : companies who does the technical development (making the app and website)
    - Sponsors : companies who have bought sponsorship via area codes
- Users: Voluntary organizations/people how uses MinForening
- Potential users: Voluntary organizations/people who have not been presented with MinForening
- Non-uses: Voluntary organizations/people who have been presented with MinForening, but who have declined using it in their organization.
- Ex-users: Voluntary organizations/people who have at one point used MinForening, but for one reason or the other have stopped using the app.

Interpretative flexibility

The concept of interpretative flexibility relates to how a technology is designed, and how that design is interpreted by different individuals or social groups (Pinch, et al., 1993) (Pinch & Bijker, 1984). This is consistent with the philosophy of social constructivism and the belief that truth and reality is experienced and interpreted individually (Jonassen, 1991).

Pinch & Bijker argues that that technology is "… *culturally constructed and interpreted*." (Pinch, et al., 1993, p. 40) and thus there are more than one way to design a technology, just as there is more than one way to interpret a technology or design (Pinch, et al., 1993).

For this project, the concept of interpretative flexibility is used to ascertain the importance of the different social groups and their experience/interpretation of the technology MinForening, and also to highlight the fact there is no right way to use or think of MinForening.

Problems and conflicts

SCOT views technology in its relation to certain social groups, and only examines the problems and conflicts in relation to a technology, if a social constitute is as such (Pinch, et al., 1993). The focus is then, on whether or not a social group experiences the problem as "problematic", regardless of any other circumstances., as Pinch et. al., (1993) also states: "*A problem is defined as such only when there is a social group for which it constitutes a "problem*." (Pinch, et al., 1993, p. 30)

This perspective on problems and conflicts in relation to technology means that the problems which will be investigated and analyzed in this project, are only the ones being uncovered/brought up by the social groups in questioning. All other problems or conflicts will be deemed irrelevant for this particular investigation.

Stabilization/Closure

In SCOT, the final stage of technological development happens with stabilization of the technological design, and the closure of any problems or conflicts (Klein & Kleinman, 2002).

Stabilization of a technology occurs, when the problems and conflicts experienced by different social groups are solved and thus diminish over time, resulting in fewer and fewer changes to the overall technology design (Klein & Kleinman, 2002) (Pinch, et al., 1993), this will in turn lead to what in SCOT terms is called *closure*, as explained by Pinch, et al., (1993) *"Closure in technology involves the stabilization of an artifact and the "disappearance" of problems*."

SCOT operates with two forms of closure; *Rhetorical Closure* and *Closure by Redefinition of the Problem.*

Rhetorical Closure

Rhetorical closure is achieved, when the relevant social groups of a technology, feels that all the problem they experienced regarding that technology, have been solved. This is regardless of whether or not this is the actually case, as long as the relevant social group feels this, closure have been achieved. (Pinch, et al., 1993)

Closure by Redefinition of the Problem

This type of closure happens when the problems regarding a specific technology becomes another than the one who caused the conflict to begin with. Again the most important part about achieving closure is that the social group with the problems, considers them to be solved. (Pinch, et al., 1993)

Since the aim of this project is to investigate what can lead to closure of the technology MinForening, it is relevant to look at how the technology have obtained stability and what kind of closure is the case.

Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology is a theoretical framework, that was first formulated to help employee technology acceptance and use of technology in the workplaces, but it has since been extended into other contexts like non-organizational settings. (Venkatesh, et al., 2012)

UTAUT was formed by combing eight different models concerning the understanding of individual acceptance of new information technology. (Venkatesh, et al., 2003)

This project adapts the concepts and definitions from UTAUT to the consumer technology acceptance and use context (Venkatesh, et al., 2003)

- *Performance expectancy*; the degree to which using a technology will provide benefits to consumers in performing certain activities.
- *Effort expectancy*; the degree of ease associated with consumers' use of technology.
- *Social influence*; the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology.
- *Facilitating conditions*; the consumers' perceptions of the resources and support available to perform a behavior.

(Venkatesh, et al., 2003, pp. 447-454)

UTAUT was later expanded into UTAUT2, which sought to further elaborate on the factors concerning user acceptance of technology (Venkatesh, et al., 2012).

The factors uncovered in this new version of UTAUT were:

- *Habit;* the extent to which people tend to perform behaviors automatically because of learning.
- *Experience;* reflects an opportunity to use a target technology and is typically operationalized as the passage of time from the initial use of a technology by an individual.
- *Hedonic motivation;* the fun or pleasure derived from using a technology.
- *Price value;* the cost and pricing structure may have a significant impact on consumers' technology use.

(Venkatesh, et al., 2012, pp. 161-162)

Figure 1 shows the relationship between the factors affecting behavioral intention (on the left) and how age, gender and experience of the users (bottom) can moderate the effects of these factors in determine if a user's will accept and use the technology in the end.

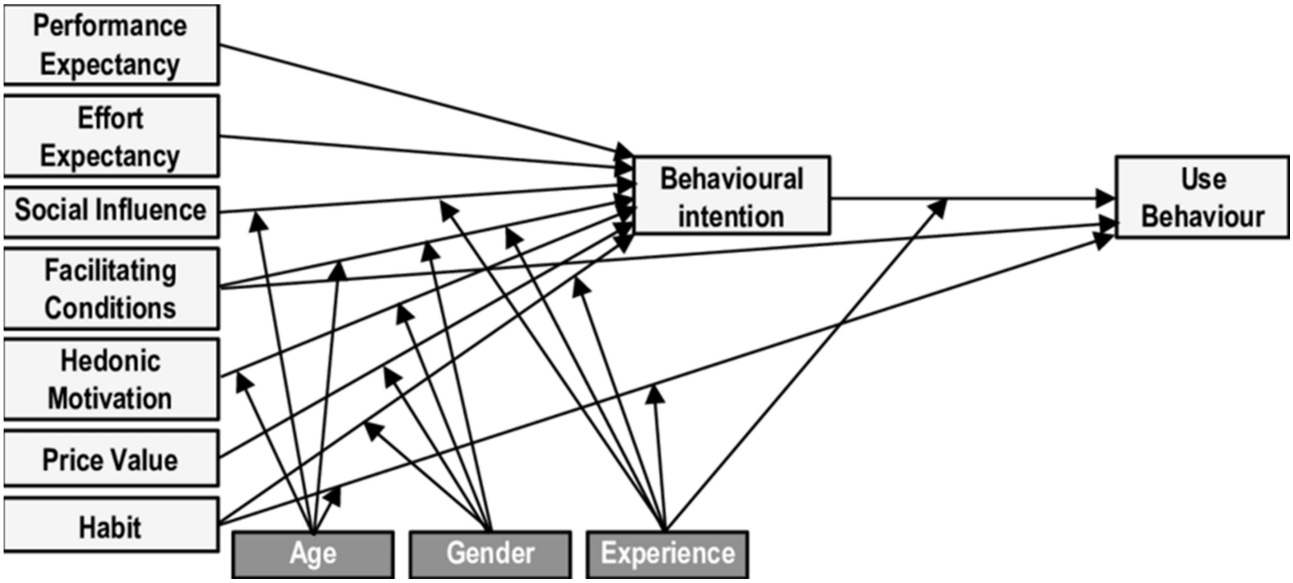

Figure 1: UTAUT2 (Venkatesh, et al., 2012)

As a part of the expansion of UTAUT, UTAUT2 also formulated five hypotheses revolving around the effects of age, gender and experienced with technology, on user acceptance of technology (Venkatesh, et al., 2012).

These hypotheses are as following:

1. *"Age, gender, and experience will moderate the effect of facilitating conditions on behavioral intention, such that the effect will be stronger among older women in early stages of experience with a technology."*
2. *"Age, gender, and experience will moderate the effect of hedonic motivation on behavioral intention, such that the effect will be stronger among younger men in early stages of experience with a technology."*
3. *"Age and gender will moderate the effect of price value on behavioral intention, such that the effect will be stronger among women, particularly older women. "*
4. ***"(A)**: Age, gender, and experience will moderate the effect of habit on behavioral intention, such that the effect will be stronger for older men with high levels of experience with the technology."*

***"(B)**: Age, gender, and experience will moderate the effect of habit on technology use, such that the effect will be stronger for older men with high levels of experience with the technology."*

5. *"Behavioral intention will have a significant positive influence on usage."*

(Venkatesh, et al., 2012, pp. 163-166)

In this project, the concepts derived from UTAUT and UTAUT2 will be used as guiding principle for what factors to look for during the data collection. How these concepts are converted into research questions for the purpose of interviewing informants will be discussed in the chapter regarding the data collection.

Methodology

Ethnography

This project was based on an internship spanning both 9th and 10th semester's techno-anthropology, with an emphasis on participant observation and problem based learning. The overall research methodology of this project is ethnography, with a focus on participant observation and interviews with informants in the field (Spradley, 1979). The methodology and methods that was applied during the internship was inspired by Daniel Neyland (2008) and his ten sensibilities of ethnographic research (Neyland, 2008). Nyland formulated the ten sensibilities as a way to address the questions of both methods (tools and techniques for data collection) and methodology (theoretical foundations of the methods) during ethnographic research (Neyland, 2008). Neyland's idea behind the sensibilities is to emphasize that research, and in particular ethnographic research must be tailored to the field and adapted to the environment being studied, hence the use of sensibilities and not directions or procedures, which carries more need for being followed strictly in the research process (Neyland, 2008). With Neyland's sensibilities, the ethnographer is free to use and adapt this technique as he or she sees fit, or as far as it makes sense in the particular research situation. This way of conducting field work, always ready to adapt to the unexpected, is supported by Coleman & Collins (2007) how emphasizes the dynamic and shifting properties of the field, and establish the field as something that is produced between the ethnographer and the informants (Coleman & Collins, 2007).

Neylands ten sensibilities for ethnographic research are as following:

1. Ethnographic strategy
2. Questions of knowledge
3. Location and access
4. Field relations
5. Ethnographic time
6. Observing and participating
7. Supplementing
8. Writing
9. Ethics
10. Exits

(Neyland, 2008)

An ethnographic strategy can help the researcher manages the many complexities in relation to during ethnographic research. This strategy should not be seen as a set of fixed step that must be followed in a specific order but rather as mentioned in the section above, ethnographic research is a very dynamic field, with ever changing conditions that makes it vital for the researcher to be able to adapt his or her research process. Likewise, an ethnographic strategy should only by seen as an initial set of guiding principle for how the ethnographer plans to conduct the research vile in the field. (Neyland, 2008)

When developing am ethnographic strategy, Neyland suggest starting be formulating one or more research questions, to help focusing the research process and to provide a starting point for the ethnographic inquiry (Neyland, 2008).

The formulation of research question can be compared to the challenge of finding the subject for the ethnographic research. The subject had to live up to the specifications provided from Aalborg University regarding problem bases learning and Master's Thesis topics, furthermore it had to be applicable to MinForening and their technology.

As was examined in the problem analysis, the topic for the ethnographic research and master Thesis was based on the current tendencies on the smartphone/tablet app market and the challenges facing MinForening, in relation to investigating why some Volunteer organizations accept their app into their organizational structure, and why some do not.

Next there was the question of what kind of theoretical framework could be applied to the problem statement, since this would have influence of what kind of additional data collection methods (besides ethnography) would be appropriate in order to answer the problem statement. As the theoretical framework for the project, SCOT was selected, since it is a theory of how technology comes to be designed a certain way, and what influence the social aspects have on the shaping and design of technology. (Pinch, et al., 1993) Since SCOT is within the social constructivist paradigm of scientific research, the data collection method would be of the qualitative kind, focusing on the life experiences of the informant and the interpretation of the statements of the informants (Doolittle & Hicks, 2012) (Brinkmann & Tanggaard, 2010).

The ideas behind SCOT highlights the importance of identifying the different social groups in relation to a technology (in this case MinForening), therefor identification of these social groups was important step in the research process, and could furthermore be used to find what kind of informant could contribute to the data collection.

From the section above, the strategy for this research process could be summarized as following:

1. Formulate the problem statement for the master thesis to provide a focal point for the research.
2. Chose a theoretical framework, which will determine the research approach most suited for answering the problem statement.
3. Identify relevant social groups in relation to MinForening.
4. Make contact to potential informants (as identified in the social groups)
5. Gather data from the informants
6. Write the project report and report the findings

As is also stressed by Neyland (2008), the ethnographic strategy should not be viewed and an unchanging step by step guide, and in the research processed it is also expected that the strategy only serves as guidelines to be followed when appropriate, as well as the possibility for the need to jump between steps in the strategy.

The second sensibility deals with the question and knowledge in ethnography, more exactly the epistemological and ontological aspects of ethnography and how this influences the different approaches in ethnography. As is already explained the chapter "Theoretical Framework", this project adopts the constructivist approach to scientific research as explained by Doolittle & Hicks (2012) and Jonassen (1991), as well as the perspective of SCOT in regards to technology as formulated by Pinch et al (1993) as the main theoretical perspective.. The project epistemological and ontological offsets are summoned up in the following sentences:

- Our knowledge of reality is constructed on the basis of our own experiences.
- Scientific research is conditional upon the social factors surrounding the research process.
- There is not one *right* way to conduct qualitative research.
- Realty happens in the mind of the person who interprets it.
- An external reality exists, but how it is perceive by people differ based on each individual's interpretation of it.

The discipline of ethnographic research has always had the premises that the ethnographer traveled to the "field of research" in order to gather the data need for his or her research. In Traditional ethnography, the field was often a foreign country or culture, where the ethnographer traveled in order to conduct his or her research; here the field is one psychical location, where the ethnographer stays for the duration of the research period. More recently, the concept "multi-sited" ethnography have emerge which is used to cover ethnography in more than one psychical location, but also to examined how the ethnographer moved through and between different research fields, where the ethnographer can choose different "objects" to

follow, depending on the aim of the research and Neyland (2008) gives six examples of what the ethnographer can follow when during mulit-sited ethnography; the people, the ting, the metaphor, the life, the conflict and the story. (Neyland, 2008)

For this project, multi-sited ethnographic was deemed appropriate since SCOT focuses on the different social groups in relation to technology, and this would mean that the research would include contact and investigation into these social groups, which in turn meant that there could be some data collection in different locations. To relate to what Neyland (2008) said about multi—sited ethnography, this project could be said to have adopted both the "follow the people" and "Follow the Thing" approach to multi-sited ethnography. "Follow the people" because of the investigations and analysis of the different social groups and "follow the thing" because this project very much focusses on the MinForening app and its relation to the different social groups, so it could be argued, that in this project it was necessary to follow the app around the different social groups in order to understand the problems and challenges the social groups experiences in relation to the app, as suggest by the SCOT.

Now that it had been established that this project is a multi-sited ethnographic study, it must be examined what influence this mulit-sited'ness has on the kind of knowledge produced by the research; it is question of epistemology and location. (Neyland, 2008)

As explained under sensibility two and in the chapter "Theoretical framework" this project view knowledge as something that is constructed by the individual how experiences it. This perspective fits well with the thought of Coleman & Collins (2007) who argues that the field is something that is preformed and constructed through social interaction between the ethnographic researcher and informant, which can span multiple physical locations. (Coleman & Collins, 2007)

The location of the field sites was determined by during an initial analysis of the different social groups of MinForening, bases in the experience and knowledge from the previous projects. The three field location that was picked was as following:

The people working at MinForening have a broad knowledge in regards to the MinForening app, the users, and the various processes behind implementation and the idea behind the technology, as well as any problems and conflicts they have experienced in relation to the technology.

The voluntary organization of TRoA has been presented with MinForening, but have not adopted the technology into their organization, and thus they can provide insight into the thoughts and ideas as to why this is the case for some organizations.

A club of runners who uses the MinForening app to organize their activity and they would therefore be able to provide insight into how MinForening works in an voluntary organization and how the experience the technology, along with potential problems and conflicts they have encountered.

After establishing, that this ethnographic inquiry would be multi-sited, there was the question of how to gain access to the different field sites in order do the data collection as described by Neyland (2008). Some access had been achieved prior to this project, since the project happened in extension to a 9th semesters internship at MinForening, where some field work was already conducted both with the organization of MinForening, and the Voluntary organization of TRoA, whose members served as informants/participants in that particular project. (Holland, 2018)

Access to PGU Runners happened based on contact provided by the people of MinForening, how knew someone there who would be interested in helping with the project.

More details about the field and access will be provided in the chapter about data collection.

With access to the field come the questions of the relationship between the ethnographer and the field of study/informants and how the ethnographer can use these relationships to gain sighting into the life and experienced of the informants. (Neyland, 2008)

When conducting ethnographic research, the ethnographer devotes both time and resources in the field, and cultivating relationships with the informants, is an important tool in order carry out the research and get a understanding into the lifeworld of the informants. (Neyland, 2008)

The relationship between ethnographer and informant has influence to the research result and thus the consequences of this relationship must be examined thoroughly in order to understand how it have affected the research and the results.

Ethnography as a scientific discipline focuses on the emergence of the researcher into the field, in order to fully understand what it means to be a part of the group/organization being studied, this closeness to the research subject, beckons reflection of how close a ethnographer can to his or hers informants, while maintaining sufficient distance for critical reflection and analysis. (Neyland, 2008)

First of all, when doing field research the ethnographer must constant be aware of his or her role in the research process, to avoid going “native” as is describe by Neyland (2008) and happens when an ethnographer losses sense of any ethnographic detachments and losses the perspective on how the ethnographer can understand how their involvement can directly or indirectly change the outcome of the study. This

need for critical reflection is especially important when ethnographer and researcher know each other before the engaging in the ethnographic research, for example when the ethnographer uses friends and family as informants as Spradley (1980) points out, friends participate in dialogue on common grounds, with both parties asking and answering questions, in contrast the dialogue between ethnographer and informant are more one-sided with the ethnographer asking questions which is then answered by the informant. (Spradley, 1979)

However being close to the field, can also have its upside, especially as far as understanding ones informants and the language they use when talking about themselves, and it is important to note, that different social groups use language differently and that this can be a challenge to the ethnographer as Spradley (1979) points out ethnographers should use and understand the language as their informants in order to get the most accurate description of the subject being studied. (Spradley, 1979)

Neyland (2008) suggest that the ethnographer reflect over the time aspect of doing ethnographic research, making a ethnographic strategy, selection a field of research and establishing relationships with the informants takes time, which must be considered during the preparation of the research process. Traditionally ethnographic research took place over long periods of time, but when doing ethnography in an organizational setting, it might not be possible or feasible to engage in this type of conventional research methods, since the organization in question might have another time frame to live up to than the ethnographer. (Neyland, 2008)

As in relation to this project, the timeframe was very most determined by the length of the semester which was about 4 moths. However this project can also be seen as a culmination of three semesters worth of projects and internship, and the ethnographic time frame can be said to have spanned 18 months. This time period have made it possible to do a “thick” description of the field, by doing a long time emersion in the organization of MinForening, in contrast to “thin” description, where the time spent in the field is less extensive and the research has a specific goal in mind. (Neyland, 2008)

During the 18 months of working with MinForening, a thorough understanding of the organization and the technology of the app.

In ethnographic research, participant observation often serves at the primary source of data collection, when investigating what it means to be a member of a particulate group and how that group operates. (Neyland, 2008)

Participant observation builds on the idea that only by participating in what is being observed, can the researcher truly gain knowledge and insight about the object the ethnographic research. (Spradley, 1979; Spradley, 1980)

Participant observation can range from merely "observing"; where the researcher does not interact with the informants or participates in what is being observed. To "Complete participation" where the ethnographer act a member of group under studied, but still makes records of the observations while maintaining a reflective and analytical view. (Spradley, 1980)

For this project, the participant observation can be said to fall under the category "complete participation" where the researcher acted as a member of MinForening and doing work for the organization, while maintain an ethnographic distance, through the project work of both 9h and 10th semesters, where the various factors impacting the participant observation was analyzed and discussed, like the relationship between the researcher and informants, the role of gatekeeper, the prior knowledge of the field of research etc.. (Holland, 2018)

The work for MinForening included visits to voluntary organizations, the design of a digital resource management system and writing blog post for MinForenings website.

Along with participant observations, interviews with the informants were conducted as a supplement in the collection of the ethnographic data and in order to further explore the factors leading to user acceptance of technology

Interviews were chosen because they offer insight into people's life and experiences and an understanding of how people experience specific phenomenons or occurrences in their life. The interview form that was chosen was "semi structured", inspired by Brinkmann & Tanggaard (2010) where a series of research and interview questions was formulated and served as a guide during the interview. This form of interviews were chosen because of the specific knowledge that where sought to be gain but at the same time, this form also allows for some flexibility during the interview to ask further questions or elaborations, which help deals with unpredictability of the field (Coleman & Collins, 2007). (Brinkmann & Tanggaard, 2010)

The research questions were formulated based on the article by Venkatesh et al. (2003) identifying and explanting factors and concept than influences user acceptance of technology in relation to the Unified Theory of Acceptance and Use of Technology. (Venkatesh, et al., 2003) The interview questions (which was more specific) was formulated using a questionnaire from the same article as inspiration.

As explained in the chapter about theoretical framework, identification of relevant social groups is an important part of SCOT when analyzing technology and therefor it is relevant to do a more thoroughly analysis of social groups in relation to MinForening. (Pinch, et al., 1993)

This analysis will be inspired by actor network theory by French philosopher, anthropologist and sociologist, Bruno Latour, which maps the relations between things and concepts in order to understand how they relate to one another in a larger network In this project, Actor Network theory will be used to map out the different social groups an there relations to MinForening. This will be explored further in the chapter about data collection. (Law, 1992)

This sensibility encourages the ethnographer to reflect on how the material from the ethnographic research is translated into written material. Neyland suggests some question in relation to writing ethnography that the ethnographer considers, mainly who are the readers of the ethnography? Will the writing start during the participant observation or after? What should be included in the finished ethnography and how should the written result be presented to the organization in the study? (Neyland, 2008)

This project report has some specification to live up to as far as the written material goes, since it the result of a master thesis report, and there for has to adhere to the university's guidelines for such Aalborg University (2018). (Aalborg University, 2018)

Because of the close relationship between the ethnographer and the subject of the research/informants calls for etchical considerations and reflections in the planning of the research process, as describe by Nyland(2008) these considerations are important when navigating ethnographic research. (Neyland, 2008)

For this project the ethical consideration was derived from Brinkmann & Tanggaards (2010)

Guiding Guidelines for Research Ethics in Social Sciences (2002):

1. That the researcher should consider whether the research project is up to a good scientific standard.
2. That the researcher must take into account the persons and groups affected by the research work (both those who are the subject of research and others that may be affected).
3. That the researcher is responsible for treating personal identifying information confidentially.
4. That the researcher must obtain the consent of those involved in the research and must disclose them concerned that participation is voluntary.
5. That the researcher will make his research results available to the public in in accordance with general scientific principles.

(Brinkmann & Tanggaard, 2010, p. 432)

Neyland (2008) emphasizes the importance of considering how and when the ethnographer leave the field of study, and suggest than the exit from the research field should be taken into account when formulating the ethnographic strategy at the beginning of the research process. (Neyland, 2008)

For this project, the exit has mostly been determined by the time frame of the project, with a pre-determined deadline for finishing and turning in the project report.

Data Collection

In accordance to the ethnographic strategy, the data collection of this project relays on the participant observation conducted as a part of MinForening, interview with relevant informants and an analysis of the relevant social groups and their associated problems and conflicts.

Interviews

As described in the strategy in the methodology section, several interviews were planned as supplement to the participant observation in MinForening. These interviews served to get a further understanding and insight into the world of the informant as well as the opportunity for them to tell their story (Spradley, 1979) (Brinkmann & Tanggaard, 2010). The interviews were based on a series of research questions derived from the concepts of UTUAT Venkatesh et al. (2003 & 2012)

These concepts where:

- *Performance expectancy*; the degree to which using a technology will provide benefits to consumers in performing certain activities.
- *Effort expectancy*; the degree of ease associated with consumers' use of technology.
- *Social influence*; the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology.
- *Facilitating conditions*; the consumers' perceptions of the resources and support available to perform a behavior.
- *Habit;* the extent to which people tend to perform behaviors automatically because of learning.
- *Experience;* reflects an opportunity to use a target technology and is typically operationalized as the passage of time from the initial use of a technology by an individual.
- *Hedonic motivation;* the fun or pleasure derived from using a technology.
- *Price value;* the cost and pricing structure may have a significant impact on consumers' technology use.

(Venkatesh, et al., 2003, pp. 447-454) (Venkatesh, et al., 2012, pp. 161-162)

In addition to these concepts, two more were added to the research questions in the interview guide. These were *the users* and *problems and conflicts.* These additional concepts where taken from the principles pf SCOT where the *users* (which might as well be called *social groups*) of technology is important to the analysis of a technology, in addition, the *problems an conflicts* that occur in relation to the technology be-

ing analyzed and their effect on the relevant social groups, makes it relevant to include as a concept for research question in the interview guide (Pinch & Bijker, 1984).

The research question served as concepts for subject that needed to be addressed in the interview in order to cover all the relevant aspects of user acceptance of technology.

In addition to each research question, one or several interview questions was formulated to serve as guiding questions during the interview is self, to provide the interviewer with questions to ask the informant if necessary, but was not meant to serve as a strict recipe for the interview and to be followed step by step. The reason for the distinction between research question and interview questions, is the point that the research question seldom makes good question to ask during an interview, as is describe by Brinkmann & Tanggard research question often seeks explanations to a specific phenomenon, whereas interview question seeks to describe them. (Brinkmann & Tanggaard, 2010)

This form, places the interview somewhere between what Brinkmann &Tanggaard (2010) describes as a loose unstructured conversation most commonly used in ethnographic research and a semi structured interview. This structure allowed for the interviewer to guide the conversation in a relevant direction, but at the same time allowed room to go outside the "script" and follow relevant line of questions. (Brinkmann & Tanggaard, 2010)

Three different interview guides where made, one for the interview with the developers of MinForening, one for the users of MinForening and one for the non-users. The interview guides can be found in the appendix (Appendix A).

Informants from MinForening

The first sets of interviews were conducted with two people from MinForening, at the location of StartupWorks City where MinForening has an office space, which they have occupied since September 2017. StartupWorks is an office Community of several small start-up tech companies organized as any other Danish voluntary organization with a board and an annual general assembly. (StartupWorks, 2017)

The first informant, E, is a the primary contact to the users and the one who visits the organizations and facilitates the implementation of the app. E is male and in the mid-twenties, as well as being a student at Aalborg University, he is also involved in several other business ventures. E was selected as an informant for interviewing, because he has an extensive knowledge about the users of MinForening, the implementation process, and because he has worked on the app for over 2 years and knows firsthand the challenges and problems MinForening has faced and is still facing.

The second informant P is one of the founders of MinForening and the one who had the initial idea of making the app. He played a major role in the initial design of the app, and he has had a lot of contact to organizations and partners during the development of the app, which is the reason he was selected to the interview. P is male and in his late thirties, and besides the work he does for MinForening, he is also an assistant professor at Aalborg University.

The interview with the informant from MinForening took place at StarupWorks location, in a common room which is available to all tenants of StartupWorks. Informant E was the first to be interview, follow by the interview of P. Both interview lasted around 24 minutes, which was recorded on a smartphone for later transcription, after gaining the informants permission. Both informants was informed of the purpose of the interview and the related master thesis as in accordance with the ethics of this project as it is describe in the ethnographic strategy.

Informants from TRoA

TRoA is a roleplaying organization located in Nørresundby in northern Jutland, just across the fjord from the city of Aalborg. It was founded in 1989 and currently counts around 250 members, making it one of the largest and oldest roleplaying organizations in Denmark. The organization of TRoA and it members have participated in two previous semester project concerning MinForening and their app. (Gunnleyg, et al., 2017) (Holland, 2018)

Informant M (male, early thirties) is member of the boards of TRoA, as was present when MinForening visited TRoA for the first time to present the app. He has an educational background in computer science and has a bachelor in software engineering. He also participated in the 9th semester project regarding the design of a digital resource management system for voluntary organizations. His knowledge of TRoA, MinForening and computer science made him a suitable informant for the interview.

The second informant R (Male, mid-thirties) is a previous member of the board of TRoA and has participated in both semester projects involving TRoA and MinForening (Gunnleyg, et al., 2017) (Holland, 2018). He has a master's in medical informatics and works with IT for Region Nordjylland and as was the case with M, this makes R an appropriate informant for interviewing to this project.

The interview with the informants from TRoA was conducted at the location of TRoA and took approximately 42 minutes, which was recorded on a smartphone after the informant had given their consent. It was decided to interview both informants at the same time, both in order to save time, both also this allowed the interview to take the shape of a focus interview, where the informants are able to play off each

other's answers and statements (Brinkmann & Tanggaard, 2010). As with the interview with MinForening, the informants were informed of the purpose of the interview and the related master thesis as in accordance with the ethics of this project.

PGU Runners fieldtrip

PGU Runners is located in the city of Pandrup in the northern part of Jutland and is part of the larger organization called PGU which spans over many different sports and activities with in the areas of fitness and gymnastics. PGU Runners currently have around 60-80 active members who participates in different forms of outdoor running. The ages of the members spans from early twenties to late sixties. Most of the year, the club runs in the area around Blokhus called Blokhus klitplantage.

It was initial the plan to conduct interviews with some members of PGU Runners as was done with both TRoA and the developers of MinForening. But during the initial contact to a key informant in PGU Runners, provided by someone from MinForening, it became evident, that it would not likely be possible to find informants to such an interview, and so it was agree that a visit to training session with the organization would be an acceptable alternative instead.

The data collection from the visit at PGU Runners was in form of field notes written by hand, which was later re-written.

Data processing

Transcription

All the recorded interviews were subsequently transcribed into written text, with the purpose of coding and analyzing them.

The transcriptions were done based in the observations of Brinkmann & Tanggard (2010) that acknowledges that all transcription are translations of written words into text, which omits nuances like tone of voice body and languages. The aim of was to get statements that could be used to describe how the informant experienced different phenomenon in relation to the subject. Therefor the emphasis was not to transcribe the interviews verbatim, and interjection as well as unfished sentences was left out of the finished transcription.

The transcriptions of the interviews can be found in Appendix B.

Coding

After transcribing the interview, the next step was to code the transcriptions as a part of the analysis, with the purpose of meaning condensation the testimonies of the informants. The coding was done using the concept from the UTUAT by Venkatesh et al. (2003 & 2012) and interview guide. The different concepts had different color-coding that helped distinguish when the informant talked specific subject related to the UTUAT and the research questions of the interview guide. The method of coding was inspired by Brinkmann & Tanggaard (2010) description of concept driven coding, where the concept of the coding have been determined in advance from the theories of user acceptance (Brinkmann & Tanggaard, 2010).

Both the interviews and the field notes where code for the analysis, and the coded interviews can be found in Appendix C.

Analysis

This analysis will revolved around research question 1-3, that was formulated in relation to the problem statement:

1) Use the principle of SCOT to analyze what different social groups exists in relation to MinForening.
2) Use the concepts from UTAUT to examine the relevant social group's experiences of the app.
3) Use the principle of SCOT to analyze what problems each relevant social group's experiences in relation to the app.

Visit to PGU Runners

As a part of the data collection I wanted to talk with members of organizations who uses the app when communicating and coordinating amongst themselves. I arranged a meeting with the organization of PGR Runners with the help of one of the people form MinForening and so the 1th of May at 5:45 pm, I arrived at Gateway Blokhus in running shoes ready to face the 5 km run I had been promised would not be too much for me and lacking of fitness. I was met by my key informant S (male mid-thirties), with whom I had been corresponding by email in the days prior. S had heard about the app MinForening from somewhere else, and had thought it would be a useful tool for PGU Runners, and had contacted MinForening himself to arrange a meeting and implementation of the app. He described himself as a tech-geek, who loved al things concerning gadgets and smartphone apps, and he had been the main force behind the implementation of MinForening in PGU Runners. This had been a requirement from the rest of the organization that he had the main responsibility, and now he is often the first person who the other members would contact in case of issues with the app.

S had informed the rest of the participants through the app (MinForening) of my presence at today's run, and that I was writing my master's thesis in corporation with MinForening, hence the reason for my visit. I was quickly introduced to a number of people who had shoved up early in order to speak with me. I was introduced to an instructor and assistant instructor of PGU Runner. As I was explained by them, the instructors are all trained running coaches and are responsible for the individual classes. The assistant instructors have no training but helps the instructors in varies ways with engaging the members of PGU Runners and help create hype amongst the members. I asked about how PGU Runners uses MinForening, and they explained how they use the app to organize their workout sessions and meetings. Under each individual workout session is a link that shows the routes that for that day, so that all participants have a chance of

knowing the route. They also use the app to post relevant information regarding the workout of the day, for example had S informed of y participation in today's run on the app.

More and more and more members joined until about 15-20 people were gathered ready to either run a 5, 6 or 10 km route. One of the instructors facilitated a few light warm up exercises before the evenings run. One of the instructors volunteered to take the up the rear to make sure that no one would be "left behind", and due to my lac of training, I thought it best to follow the group in the rear, taking the 5 km route. For PGU Runners ,the focus is very much on the social aspect of running, as S explained to me, running is something everybody can do almost everywhere, and so PGU Runners tries to stand out by creating a community and putting an emphasis on social relations.

On the first stretch of the route I was accompanied by S, and we talked about PGU Runners and their experiences with MinForening and the app. Over all PGU Runners was satisfied with MinForening and felt it had helped ease the organization of training session in the organization. Previously the relied a lot on email, Facebook and their webpage in order to get information out to the members, but with implementation of the app, much of that was no longer necessary, to the point where they no longer needed a calendar (which had to be updated regularly) on their webpage. Now they relied solely on the activity wheel and activity list in the app. S explained that he had put in all the training sessions of the year in the app, when it was first implemented, to make it as easy as possible for the instructors to manage the training session they were responsible for, and all they had to do then, was to add their own description to the activity. PGU Runners do not require their members to press "participate" to the individual training sessions. This decision was made to avoid overwhelming people with too many new things they had to get used to. S also said that it was he experienced more and more members was using the app and that he expected the number of active members in the app to increase steadily over time, but at the same time he admitted that some time people require a little "push" to get them to use the app. I asked S about the communication with MinForening, and he answered was that they were very happy with the close communication and how easy it was to get a hold on the people working for MinForening. They felt that they could get answers to their question and that MinForening listened to them in regarding their wishes for additional functions in the app. One of their requests was a chat function to help them communicate directly member to member, and that this would further diminish the need for email and messenger. Another positive side effect of implementing the app in RGU Runners, was the fact that the members who did not use Facebook could use the app instead to communicate with the organization and stay informed of the various activities within PGU Runners.

A little over 1/3 into to the route I was left by S, who joined a group of runners further ahead on the 10 km route, and so the rest of the run I spent with the other who only ran the 5 km route. One of the other runners who I followed along with, was a middle-aged woman (informant D), who I asked about her experiences with the app. D confessed to me that she did not uses the app, and that she properly would not be of much help in my inquiry, since she had very little experience with the app. I told her that it was very relevant for me to not just talk with people who used the app, but that it would be a help me to talk with people who for some reason or the other, have not taken to using the app. D explained she and her husband both are members of PGU Runners and that he had the app on his smartphone and used it regularly, so if needed he would inform her of anything she requires to know. She also explained that when they first got the app implemented in the organization and she tried to use it, she found it to be too much trouble,and quickly gave up on using it. D also said that since her husband had the app and keeped her informed, she did not have any real incentive to use the app.

On the last part of the route, my missing fitness became obvious, and not much air was left for talking. We returned to the point where we set off, and I was able to regain my breath while watching the other participants from the 6 and 10 km run return. When everybody was gathered again, one of the instructors led the group in a series of stretches. Afterwards S got the attention of the group again and stated that anybody who would like to share their thoughts and experience with me and help me with my master thesis, had the opportunity to do it now. This spurred some of the other participants to come forth and tell me about their experiences. Most of their experiences with the app was positive, a lady stated that it was fun to be able to see how many members PGU Runners had , but some issues was also uncovered this way. A man mentioned that he thought the login time was very slow and that this was of some annoyance to him. Another man said that he thought it was annoying that the app would logout automatically after a certain amount of time, and a woman suggested that the app should be able to login using a person's Facebook account to make the login process easier. I explained that it was a conscious decision made by MinForening that the users have to manually login every 5 days and that this was for security reasons in the case of theft. This explanation seemed to be accepted by most of the crowd. Another point was made by a third man, that the app would not give any notification, and that he as a consequence seldom logged on to the app and used it. He also explained that he would seldom press "participate" to the activities he joined in, and that this was properly the explanation for the lack of notification, but since he did not have to express his participation to a given activity, it was hard for him to remember to do it. We discussed the possible solutions to this and arrived at the conclusion, that the individual users should be abel to customize what kind of notification they would receive. There was clearly a dichotomy at play here, were the users would only receive notification if the pressed "participate" to an activity, but the lack of notification made it hard

to get into the habit of using the app regular, making it hardy to remember to use the app to express participation to an activity.

After about 20 min people started to break up and head home. I expressed my gratitude towars S and the remaining runners and headed back to my car to write as many notes as I could, since it had not been possible to record anything during the run. I found a stack of posted notes and jotted down the main points from the evening, to be organized and rewritten later on. I then started my car and headed south with two new blisters under my feet and the knowledge that I would be sore in the morning.

Analysis of relevant social groups

In connection to the problem statement, a series of research questions were formulated to help guide research process in answering the problem statement. The first one was phrased as following:

1) Use the principle of SCOT to analyze what different social groups there exist in relation to MinForening.

This was in order to get an understanding of actors there are in relation to MinForening and how the groups may be connected to each other.

For the identification of relevant social groups, the data was compiled both through participant observations and interviews with the informants. The actor network is compiled of information gathered by own account and the account of the informants.

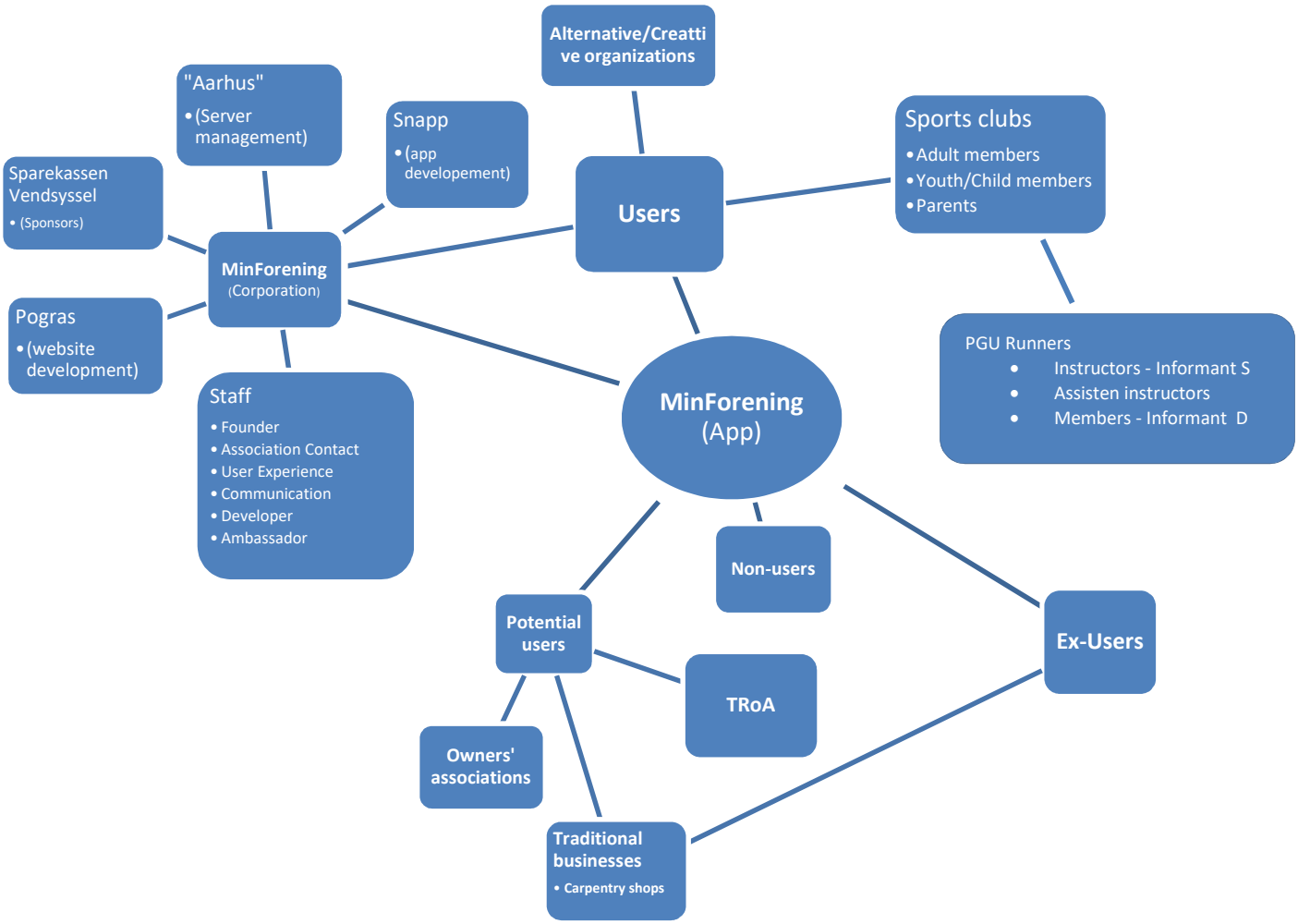

Figure 2: Actor network of relevant social groups in relation to MinForening (app)

The following is an explanation of the network of social groups in relation to MinForening (the app):

The group *MinForening (Corporation)* includes all the people and companies working for MinForening in one way or the other.

It has five subgroups:

1. **Staff**; the staff is a direct part under the company of MinForening and resides at the office at StartupWorks. The A*ssociation Contact* is primarily responsible for all communication with the Organizations using MinForening or interested in using MinForening. User Experience handles the improvement of the app, and the involvement of the users in the further innovation of the app
2. **Progas**: A small startup company that also resides at StartupwWorks, and who handles the coding of the website for MinForening.
3. **Sparekassen Vendsyssel**: The main sponsor of the app MinForening. Their logo is featured every three hours when opening the app.
4. **"Aarhus"**: A company residing in Aarhus, which manages the servers of MinForening.
5. **Snapp**: App developing company in Aalborg, who is coding the app.

In the interview with the informants from MinForening, both E and P where asked to describe what kind of *users* are associated with MinForening.

The sub-groups of users can be listed as following:

1. **MinForening** (coorporation)
2. **Alternative/Creative organizations**
3. **Sports clubs**
    i. Senior members
    ii. Children/young adult
    iii. Parents
    b. PGU Runners
    i. Instructors
    ii. Assistant-instructors
    iii. Members

Informant E distinguished between the traditional sports clubs and the more creative and alternative associations. The difference between the two according to him is that sports clubs uses the app to manage the daily operation of practices and other activities within the organization and where MinForening is more frequently used in sports clubs with youth teams, where the parents are more involved in the activities of their children. On the other hand the creative/ alternative associations do not have many fixed activities that needs managing, but uses the app to setup standalone events and voluntary work. Another distinction E made regarding the users was a difference in ages amongst the users. In his point of view, it is noticeable that many children and young adults have been raised around technology, and therefore are quicker in learning knew technology, in opposition to people over forty, who in E experience require a little more guidance and instructions to the app.

When informant P was asked to describe the users of MinForening, he mentioned that MinForening had many different types of organizations and associations, but common to them was the community and the need for internal communication in order to organize, plan and coordinate amongst the user/members of an organization.

From the trip to PGU Runners, it was discovered that the members are divided into three groups; the instructors, assistant instructors and ordinary members.

MinForening (corporation) is furthermore connected to *users*, since MinForening uses the app for internal communication and managing of activities and meetings.

The *ex-users* represent the groups that at some point have downloaded, registered and/or used MinForening (app), but for some reason have stopped using the app.

Informant E, mentioned that there had been some carpenter shops, who have downloaded the app at some point, but failed to adept the technology properly, and had subsequently stopped using it.

Non-users is the social group that represents people, organizations and association who have been introduced to MinForening, but have declined using the app. TRoA belongs to this group, where MinForening attended a board meeting in January 2017 to present their app, but the board of TRoA saw no use for the app in its current form. This was also clarified in the interview were Informant M explained that this was because MinForening did not offer anything new as far as functionalities goes, or a better alternative to existing methods of organizing and internal communication. However as it was also uncovered in the interview, informant M and R could see TRoA using MinForening at some point in the future, if some new func-

tionalities were added that could help TRoA with tasks they do not currently have a satisfactory technological solution to, namely a way of managing the physical resources of the organization.

Further in addition to the group of potential users, are traditional businesses and owners associations which informant E mentioned as potential users in his interview. Furthermore informant P explained in his interview, that MinForening have a generic view on what makes up an organization, and that the goal of MinForening is to be usable for all types of communities and groups.

2) Use the principle of SCOT to analyze what problems each relevant social group's experiences in relation to the app.
3) Compare the results from research question 1-3, to determine when/why the acceptance/implementation of MinForening has been a success, and when/why it has failed.

Analysis of concepts from UTAUT

This is the result of the analysis of the testimonies from the interviews and the notes from the field visit. This purpose of this analysis was to help answer research question 2 in connection to the problem statement:

2) Use the concepts from UTAUT to examine the relevant social group's experiences of the app.

The purpose was to examine each of the 3 groups experiences of MinForening in relation to the factors from UTAUT, in order to understand when and where the app have been successful in meeting the requirements from the groups and in which instances it had failed.

Statements that influence the acceptance and use of MinForening in a positive direction are marked in green.

Statements that influence the acceptance and use of MinForening in a negative direction are marked in red.

The initial analysis can be found in Appendix C.

MinForening	**PGU Runners**	**TRoA**
Opinion condensation of statements in relation to *Users/Relevant Social Groups*		
Informant E distinguished between the traditional sports clubs and the more creative and alternative associations. The difference between the to, according to him, is that sports clubs uses the app to manage the daily operation of practices and other activities within the organization and where MinForening is more frequently used in sports clubs with youth teams, where the parents are more involved in the activities of their children. The creative/ alternative associations do not have many fixed activities that needs managing, but uses the app to set up standalone events and voluntary work. Another distinction E made regarding the users was a difference in ages amongst the users. In his point of view, it is noticeable that many children and young adult have been raised around technology, and therefore are quicker in learning knew technology, in opposition to people over forty, who in E experience require a little more guidance and instructions to the app. When informant P was asked to describe the users of MinForening, he mentioned that Min-	The significance of having a user act as a super user (informant S) and driving force in the implementation of MinForening in an organization, who can help the other members in case of problems or issues. Informant D found the app difficult to use, but furthermore lack incentive to use the app, because she can rely on her husband for information.	Both informant of TRoA are young men with significant knowledge of computer technology.

Forening had many different types of organizations and associations, but common to them was the community and the need for internal communication in order to organize, plan and coordinate amongst the user/members of an organization.		
Opinion condensation of statements in relation *Habit*		
	PGU are aware that they have to sometimes ”forcer” their members to use the app, but a the same time they are reluctant to push too much new onto the members, therefor it is optional to whether or not you join an activity in the app, prior to that activity. Would like to be able to set which notifications you recieved on your phone, this would also help with getting people to use the app regulary.	The habit of what people normally uses plays a role in the usefulness of the app, since the app requires all relevant members of an organization to have the app and use it, in order for it to function optimal. I people have a habit of using other technology, the new technology must be significantly better, in order to get people to change their habits
Opinion condensation of statements in relation *Hedonic Motivation*		
The developers of MinForening are hoping to use nudging to guide the users around the app and to have the users, and to make the implementation process easier act in a certain way. The developers also considering using gamification in relation to the app and the activity of the users, where one could get and overview of the participation on a team or in an organization, this could be in the form of virtual trophies or statistics.	Some members of PGU-Runners found it fun being able to see how many members was registered in the app under their organization.	Initial skepticism about “turning a calendar app into a game”, but when talking about the possibility for the app to provide statistics regarding participation and activities in one's volunteer association, the attitude changed towards the positive. This could be used as a means to “show off” for example how many kilometer you have run in a week, or if you have participated in enough traning session to be allowed to play the big game. It could also be used to get an overview of how much you are getting for your money.
Opinion condensation of statements in relation *Price Value*		
The app is free to use, because MinForening want all (organizations and the members) to be able to use the app, no matter the economic situation. They are also aware that the economy in many VO’s do not leave much room for them to pay for services for their members like the app.		It is not seen as possible to charge money for using the app, because other alternatives exist that are free, and smaller VO’s would not be able to afford even a minor fee, and thus would choose not to use the app. However the informant were favorably to an option, were you could pay to get the app without commercial for the sponsor.
Opinion condensation of statements in relation *Performance Expectancy*		
The purpose of MinForening is to make internal communication in a VO’ as easy as possible, and to ease the administrative workload of the people during voluntary work, making the daily managing of VO easier. It must also be easy for ordinary members of VO’s to participate in	PGU Runners uses MinForenign to organize and administer their training session. The rout for each run is put up as a link under the activity. They are satisfied with the app replacing Facebook and email, which they found to be less than optimal in way of communication	Informant R prefers a conventional calendar view. The app segregates activities related to the organizations and other activities non-related, which makes it difficult to maintain overview of one’s spare time and figure out which days are available.

activities and events. For other communities than VO's, MinForening wants to help organize voluntary work, activities and events. Overview and time saving are some of the key principals behind the app, and the point is for the user to spend a minimum of time in the app itself. MinForening have involved the users of the app in the design process and when deciding what kind of functionalities were needed by the users.	and coordination. Have a great desire for chat function as they use messenger and email for communication between themselves. PGU is genuinely happy for MinForening and feel that they have made coordination easier than for example facebook. PGU is happy with the calendar function and has completely removed the calendar on their website which should be updated regularly (This was seen as cumbersome)	They fear that the wheel will become cluttered, with the number of activities in TRoA, and there by loose the overview, also the wheel is not seen as the most efficient way of displaying activities in an organization. It is not enough that the app offers a smarter way of organizing, coordinating and communication, if the app itself does not offer something new, that the organization currently does not have a technological solution to, there is not much incentive to use the app. The app is only functional if all members of an organization uses the app. The structural nature of TRoA makes it difficult for it to adopt MinForening, since few activities are determined in advanced, and many occur spontaneous.
Opinion condensation of statements in relation *Effort Expectancy*		
MinForening knows that some people downloaded the app, but have trouble getting it to work for them, and abandon it. MinForening have used the workshop to observe how people use the app, and what kind of issues they have had in relation to usability. The process of improving the app and make it more user-friendly have been a continuous iterative process involving the users.	It could be nice with easier login eg. through facebook.	Not overly fond of the activity wheel as a way of displaying activities in an organization. The purpose of the app does not hold up, is the people I am interesting in reaching are not on the app. When using the app it can be necessary to do "double" work if you wish to engage people in your activity that are not a member of the organization for whom you are making the activity. This is regardless of the fact that the app makes it easier to organize events or activities in a organizations. If the user do not have an incentive for using the app regularly, then there is not much idea in having the app in a organization, and they will miss much of what is going on in the VO, like parties and meetings. Members of VO's that might have a limit of the number of participant for an specific activity, might have more incentive to use the app.
Opinion condensation of statements in relation *Social influence*		
In Communities where MinForening are used be some organization, there might be an incentive for other organizations, associations or clubs to use MinForening	It is positive that people who do not use facebook (for one reason or another) can use the app instead of communicating. One of the help instructors finds that people who are not on facebook sign up for the association inside the app.	

Opinion condensation of statements - Facilitating Conditions		
MinForening host workshops for the user, where they introduce the app and its functionalities. Mostly it is for the trainers and instructors and MinForening will also help with register the members of a VO into the app itself as a part of the implementation process. The participants will also have the opportunity to try out the app on a tablet, in order to familiarize them self with it. MinForening experiences that VO often needs a lot of assistance in the beginning of the implementation process MinForening are always available for the VO to contact either by mail, SMS or phone, and will help if n VO experience issues with the app. MinForening will also gladly meet face to face with VO's The general experience is that the VO's are glad for close contact to MinForening.	PGU Runners has been pleased with the close contact with MinForening. They have felt that MF is easy to get in touch with and respond quickly to email and phone. They have felt they have been able to answer their questions and that MinForening has listened to their wishes regarding content and features of the app (the upcoming chat feature)	
Menings kondensering af udsagn in relation *Problems and Conflicts*		
The first steps of the implementation process are the most difficult. When involving the VO's in the further innovation of the app, it can be difficult to get real feedback that can be translated into actual improvement of the appss design. It can be a challenge to translate the needs and wishes of the users into requirements specification for the app developers. When the users report and issue with the app, it can be difficult to recreate the exact case of that issue in order for MinForening to understand it. The fragmentation of MinForening (corporation) results in tings taking longer time to be done and needing more communication. MinForening is not always prioritized by its partners. Many traditional sports clubs activites are divided into season, and if MinForening hits and off-season to introduce a new	Problem with slow login time You only receive notifications when you have participated in an activity if you do not press a participant for any notifications and thus there is not much incentive to access the app and use it. It's irrational that the app logs out every 5 days. It did not seem like the PGU members knew that it was logging out regularly, and for them it seemed by accident as if it was a mistake. They seemed more understandable when they were told that the app logs out of the user for security reasons. It is optional for the members to indicate participation in advance using the app. This choice was made because PGU Runners did not wish to overwhelm their member with new requirements or participating in the clubs activities.	People are used to using Facebook as a means of communicating, and changing that habit can prove difficult, at the same time, the app does not work properly if all the people you need to be able to communicate with are not using it as well. Using the app to administer one activities in relation to VO's, means removing that part from the rest of one's social life on for example facebook, meaning you have two apps to consult when managing your life. If you force people to use the app, they will not adapt I "organically" and it will not become part of their daily life. There is no way to "move" information out of the app, meaning that if you have an event where you wish to invite people from other organizations, you have to invite them some other way.

version of the app it can be hard to get the sports clubs on board. Different kinds of communities have different need, but MinForening as an app have a generic view on association and organizations. How can MinForening learn about how the users uses the app and how to improve it? Getting a new perspective on the technology (the app). The iterative design and development process of MinForening is a costly affair.		

With the result of this analysis, it is now possible to compile an actor network of the different social groups in relation to MinForening, as well as the problems and conflicts these groups experiences. This will be illustrated in the following chapter, while the accounts that influence the acceptance and use of MinForening in a positive direction are marked in

Actor network of problems and conflicts to social groups

Next it was examined what kind of problems and conflicts (illustrated by the hexagonal figures) could be identified in relation to the social groups, using the results from concepts from UTAUT. This will help anser research question 3 of the problem analysis:

3) Use the principle of SCOT to analyze what problems each relevant social group's experiences in relation to the app.

Users

Here are the conflicts and problems that where identified in relation to the user.

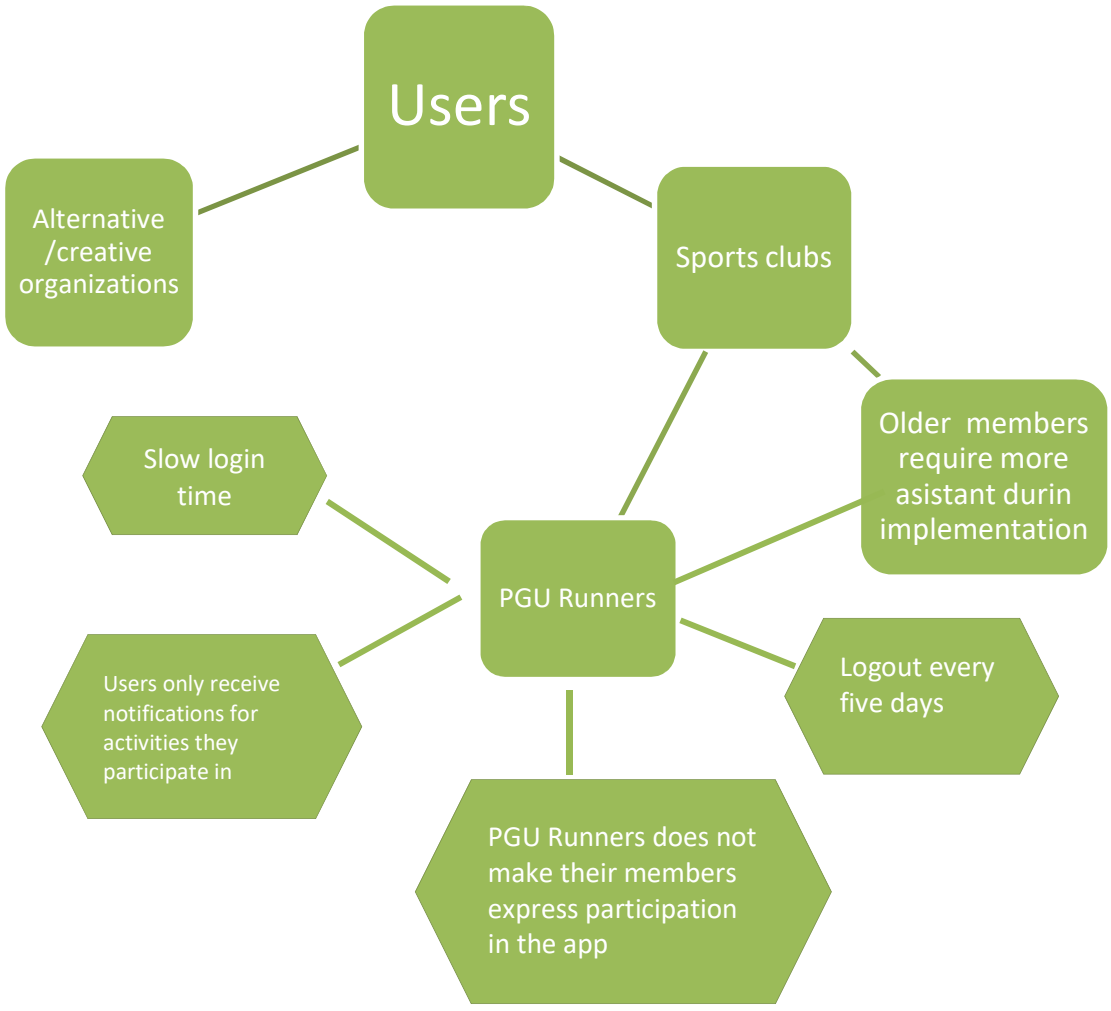

Figure 3: Actor network of problems and conflicts related to the social group "Users"

MinForening (corporation)

Here are the conflicts an problems that where identified in relation to MinForening (corporation

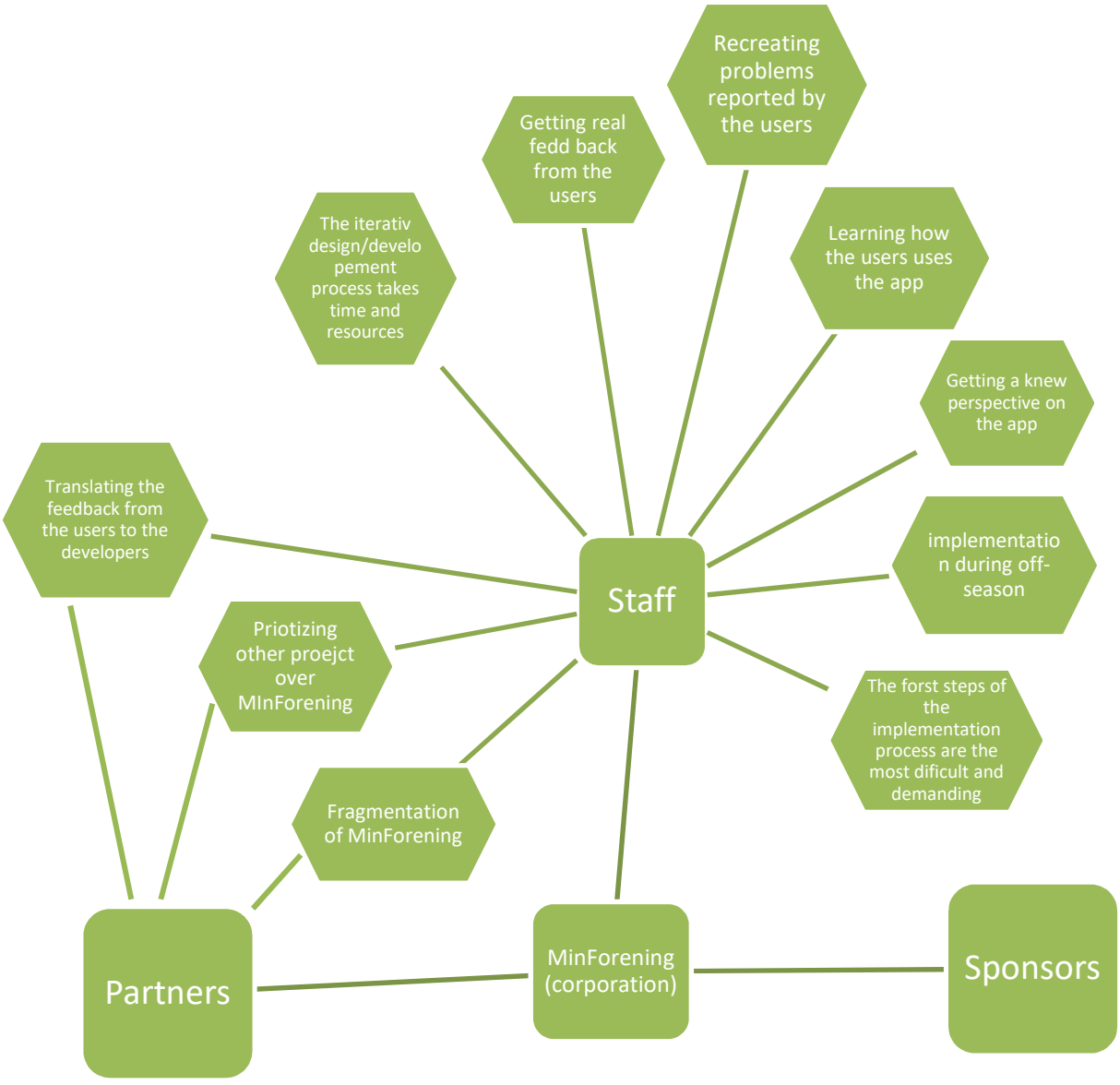

Figure 4: Actor network of problems and conflicts related to the social group "MinForening (Corporation)"

Non-users

Here are the conflicts an problems that where identified in relation to TRoA (as non-users)

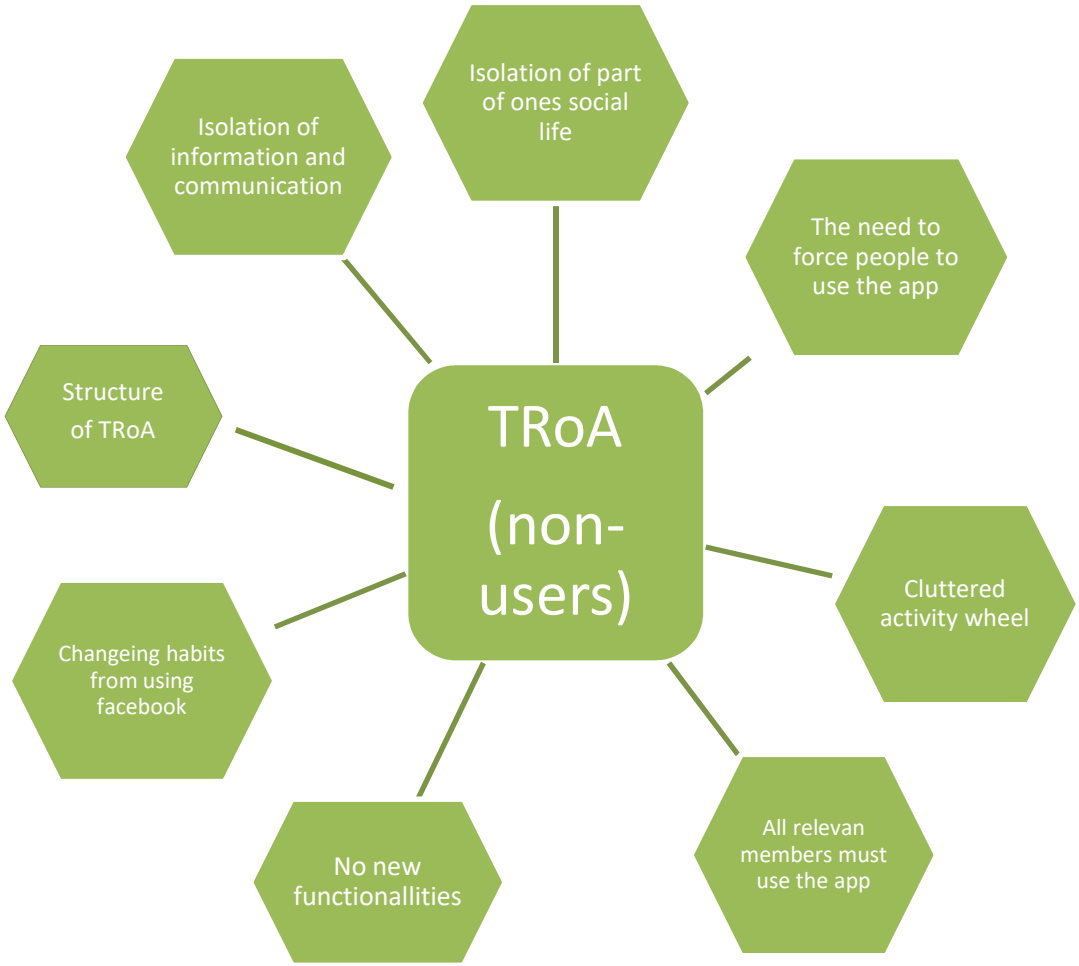

Figure 5: Actor network of problems and conflicts in relation to the social group of "TRoA (non-users)"

EX-users

Here are the conflicts and problems that where identified in relation to ex-users as stated by the informants from MinForening.

Figure 6: Actor network of problems and conflicts relating to the social group of "Ex-users"

Discussion

Theory

This project sought to understand the factors leading to the acceptance or rejection of the app MinForening by analyzing different social groups experience and opinion towards the app. The theories which constitute the theoretical framework for the project have provided a way to view technology and technological development from a social perspective (SCOT). The theories have also given some concept to use when investigating the factors affecting user acceptance of technology (UTAUT).These two theories offers different perspectives and approaches to the acceptance of technology. However it is the belief of this project, that together these two theories (SCOT and UTAUT) offers a more complete perspective on acceptance of technology, than the individual theories would separately.

First of all there is a different between the *users* perspective being the main focus point versus *relevant social groups.* In UTAUT, the perspective being investigated is solely the acceptance of technology by the users of that particular technology, and not so much how the acceptance is influence by other groups of people (social groups) with relation to the technology in question (Venkatesh, et al., 2003). (Pinch, et al., 1993)

However SCOT emphasizes the need to consider not just the users perspective, but the perspective of all groups affected by the technology in questions, in order to understand what have lead some social groups to accept a technology, but equally important why some social groups have not. This project was similarly interested in analyzing why groups, who were the targeted users/potential users, had rejected the technology (MinForening). In addition it was also uncovered during the participant observation in MinForening, that there where cases where VO's had initially adopted/implemented the app (thus becoming users) but had later stopped using the app, making them ex-users and thereby not with-in the scope of investigation as seen by UTAUT . By adopting the concept of *relevant social groups* with-in the theoretical frame of this project, it became possible to view all groups in relation to a technology as relevant for the acceptance or rejection of that technology, which according to the belief of this project, gives a more nuanced view an acceptance/adoption of technology by people. This approach also recognized there can be many different kinds of users in relation to a technology, that the term *user* as a description of all the different peoples and groups is simple inadequate and a simplification of the reality surrounding the use of technology. By utilizing the term *relevant social groups* instead, it becomes possible to distinguish between different groups of

users and to take into account the unique problems challenges and perspectives of those social groups, when analyzing a technology.

Another aspect of using both SCOT and UTAUT as theoretical frameworks for this project, is that while SCOT offers a method for analyzing technology (identifying social groups, problems and conflicts related to a social groups and finding solution to problems and conflicts in relation to social groups (Pinch, et al., 1993) but does not offer any help in identifying the actual factors affecting acceptance and use of technology. UTAUT as a theory, have identified 9 different factors that can be related to the acceptance of technology by the users. In this project these factors helped guide the interview question in relevant directions during the data collection (Venkatesh, et al., 2012) (Venkatesh, et al., 2003). This also helped during the analysis of the data, where the factors from UTAUT were used to code and synthesize the data during the analysis process.

Results

This project yielded several interesting results in relation to the acceptance or rejection of the app MinForening by relevant social groups. The discussion of the result of the data collection and the analysis will try to answer research question 4 which is:

Compare the results from research question 1-3, to determine when/why the acceptance/implementation of MinForening has been a success, and when/why it has failed.

In the cases where the adaptation of MinForening into a voluntary organizations have been a success, several factors where identified that could help explain the successful implementation. Firstly, the user of PGU noted that they had been very happy with the close contact with MinForening and how easy I had been to reach MinForening with issue and questions regarding the app. To relate this to UTAUT, this indicates that concerning the *Facilitating Conditions* of the app, and since the experiences of MinForening likewise are, that their users are happy about the close and easy communication. This could mean that MinForening have been successful in ensuring that the users are satisfied with the facilitating conditions of the app. Venkatesh, et al. (2012) likewise arrives at the conclusion, that users are more likely to accept and use a technology, if provided with sufficient facilitating conditions (Venkatesh, et al., 2012).

Another aspect that can have influenced the success adaptation of the app into a voluntary organizations, is the involvement of the users/organizations in the design process and development of the app. MinForening have been asking the users what their needs and requirements for the technology were, and testing the usability of the app during the implementation workshops, and thus ensuring that the *Effort Expectancy and Performance Expectancy* of the app lives up to the expectation of the users. In the case of PGU Run-

ners, the members feel that MinForening have made it easier to communicate and coordinate internally in the organization, and have successfully replaced Facebook, email and the calendar in their webpage, which in the case of PGU Runners was the old way of communicating and coordinating. There are however, circumstances where the *Effort Expectancy and Performance Expectancy* have been less than successful in ensuring the adoption of the app. The big pointers, provided by the informants of TRoA, as to why they could not imagen MinForening being used in the context of TRoA, was due to the fact that in order for the app to functions optimal, all members of an organization must have and use the app regularly as informant M explains: "*I also think that a problem with adopting this (app) is that the app does not give me any (useful) function if everyone else does not use it too."* (Appendix B. 16)

Performance Expectancy, according to Venkatesh, et al (2003) is the most important factor determine the success or failure of user acceptance of technology (Venkatesh, et al., 2003) and therefor a vital factor to consider when investigating why the app MinForening is adapted by som VO's and rejected by others. As the statement from informant M is evidence of the *Performance Expectancy* of the app as far as the informants from TRoA are concerned, does not live up to the expectations, the same goes for *Effort Expectancy. As* Venkatesh, et al. (22013) states, this is also a significant factor determining user acceptance of technology, and same as with the *Performance Expectancy* of the app, the informants of TRoA view the apps *Effort Expectancy* as low, as informant R comments: "*Well a wheel just takes up a lot of space with a lot of information on the screen*." (Appendix B p. 14)

There were also concerns that the activity wheel of the app, would become cluttered and disorganized with too many activities, thus missing the point of giving an simple over view of the user's or VO'S activity and working against both *Effort Expectancy and Performance Expectancy* of the app. This can also be related to the structure of the organizations of TRoA, which has many different activities of which a great deal occurs spontaneously. This is interesting because it could mean, that some voluntary organizations and associations, have an organizational structure that are not compatible with MinForening, thereby clashing with the views of MinForening; That all VO's are basically the same and have the same needs in terms of communication and coordination as stated in the interview with informant P from MinForening. Another concerns from the informants of TRoA, was that they saw the app, as removing a part of their social life (the activities with in their VO's) and isolating it. This was seen as an issue in the circumstances of planning activities where the users would have to check several sources (different calendars, Facebook etc.) in order to find out whether or not they have other engagements, and where and making it necessary to do some tasks twice, if and event is also aimed at people outside of the VO, and thereby requiring to use email or Facebook to target them.

This issue also related to the UTAU factor of *Habit*, which was proven to be problematic for both PGU Runners and the informants of TRoA. PGU Runners acknowledge that they might have to compel their members in order to get them to use the app, more regularly, but at the same time they were afraid to overwhelm the members by imposing the use of the app on them. The issues of *Habits* were also raised by the informants of TRoA, especially in the instance of making people use other means of communication and coordination internally in and organization than they are used to as informant M describes: "*That's the fact that if there were 1.7 billion people who used that app and we checked seven times a day, 90% of the issues we were talking about would not exist. The problem is they (users) have to move (change from Facebook to the app MinForening)"* (Appendix B p. 18)

The *Habit* of the user have, together with *Experience* have been proven to affect the acceptance and use of technology amongst users, especially concerning habit, where prior use of technology have been proven to be a strong prediction for future use, thus linking past *experience* with technology to the future intention to use a technology. (Venkatesh, et al., 2012)

Another possible success criterion for the adaptation of the app is the factor of *Price Value.* This factor has been shown to influence the use of acceptance of technology, especially in non-organizational settings, where the individual user is faced with the economic burden. When the financial cost of the technology do not excess the perceived benefit of said technology to the consumer, the price value can be said to have a positive influence of user acceptance and use of technology (Venkatesh, et al., 2012) . In this case there is a clear connection between the opinions of the informants of MinForening and the Informants of TRoA, where both parties are on the same page about the cost of the app needing to be free of charge. Seeing as TRoA is also considered potential users to MinForening, this coincident speaks to the potential successful adaptation of the app in TRoA should the problems that at the moment hinder the successful adaptation of the app, be otherwise resolved.

In relation to the factor of *Social Influences* in the adoption or rejection of MinForening, the informants from MinForening, hoped that the use of MinForening could spread within a community where some VO's or other associations already uses they app to other relevant groups like local business and owners associations, where MinForening already sees a potential for the app. Another aspect of *Social Influences* can be seen in the testimonies from one of the runners from PGU, who mentioned that she had experience the people who did not use Facebook, would download and use the app instead. According to Venkatesh, et al. (2012) the social influences are more prominent in a voluntary setting, meaning when the use of the technology is not something that is mandatory for the use, in contrast new technology being introduced in the

workplace (Venkatesh, et al., 2012). Thereby making it a relevant factor to consider in the case of Min-Forening, this is based on the voluntary use in a non-organizational setting.

The H*edonic Motivation* factor in relation the user acceptance cannot be said to take up much room in this project, though hedonic motivation have been shown to influence the acceptance and use of technology as also pointed out by Venkatesh, et al. (2012) which is the reason for the factors inclusion into the extended version of the UTAUT. (Venkatesh, et al., 2012) During the collection of data, both informants from TRoA and MinForening mentioned the possibility of using gamification in making the app "more fun" to use, and there by increase the incentive to use the app. However, as the informants from MinForening explained, this was not a priority at the movement, but it was something they would considered doing further in the development process when the basic functionalities of the app where functioning to their satisfaction. As for the users of PGU Runners, the only time anything related to hedonic motivation was mentioned, where one of the runners who said that she found it to be fun to go into the app and see how many members the organization had. Parallels can be drawn between this statement and the statements from the informants of TRoA, suggestion that some kind of statistic of participation and the like could be an interesting feature, but further investigation into the potential of hedonic motivation in relation to the app, could be desired.

As far at the *users*, their *Experience* with technology and how this has affected the adoption or rejection of MinForening, some of the most interesting discoveries where made in the project. As mentioned before in this section, past experienced have proven to influence the adoption and use of technology (Venkatesh, et al., 2012) and similar to the claims of Venkatesh, et al. (2012). It was uncovered during the interview with MinForening that their experiences corresponded with this claim, and that young people where quicker to familiarize them self with the app and its functions, whereas people over forty, needed further guidance and instruction before they could properly navigate the app. These statements corresponds very well with the findings from the visits to PGU Runners and the conversations with the two informants S and D, where S, a younger man, was very open and positive towards to the use of MinForening and was also the person responsible for instigating the implementation/adoption of MinForening into PGU Runners . Informant D, on the other hand, was a middle-aged woman, who did not herself use MinForening despite being a member of PGU Runners. Her early experiences with the app and the fact that her husband, who is also a member if PGU Runners, uses the app and can pass in relevant information to her, did not give her much incentive to use the app since. These observations relates well with the many of the hypotheses formulated in UTAUT, which states that age, gender and experiences will affect different aspects of user acceptance of technology. According to several of the hypotheses featured in both articles from Venkatesh, et al. (2012) (2003) young men tend to be more quickly in the acceptance of a technology, not relying much on the facil-

itating conditions, in contrast to older women who tend to need more support and guidance when learning to use new technology (Venkatesh, et al., 2012) (Venkatesh, et al., 2003). However this poses the interesting question, of why the informant of TRoA was not more positive towards MinForening, since both informants where young men, with significant past experience with technology? Possible the lack of satisfaction in the other UTAUT factors overshadowed this apparent advantage.

Surprising findings

The research conducted in this study revealed some surprising findings that did not correspond with any of the theories (SCOT and UTAUT).

The first surprising find happened at the visit to PGU Runners and the meeting with informant S, where it became evident that he had play a big role in the introduction and implementation of MinForening into the organization of PGU Runners. The testimonies of informant S described how his fondness of gadgets and technology made him interested in MinForening when he first heard about the app and how he was responsible for introducing the app to the association. Later his role as a kind of super user of MinForening, have helped the other members of PGU Runners, when they experience issue with the app or when they had question regarding the app and its use. This discovery can be related to the theory of *Diffusion of Innovation* which was first formulated by American sociologist Everett M. Rogers in 1962 which describe how innovation of technology and ideas moves through society based on the four elements of; the innovation, the communication channels, time and a society (Mehmood, et al., 2016). Within this theory are the concept of *early adaptors* which can be describe as following "*The early adopters tend to adopt ideas after innovators and hold leadership roles in the social system. Those are responsible for bringing the innovation to the attention of the mass mark*." (Mehmood, et al., 2016, p. 2) In the case of this project, informant S could be said to have the role of *early adaptor* in the adoption of MinForening into PGU Runners, being the primary force behind the implementation of the app, and aiding the other members when needed. Neither the theory of SCOT or UTAUT takes into consideration the motivation of individuals to implement a technology into their organization, or considers the role of early adaptors into the successful user acceptance of technology. However according to the result of this project, it can be said that with the case of PGU Runners and informant S, perhaps there is a need for considering the role of individuals as early adapters in the acceptance of technology by users.

Another interesting discovery that was made during this project was that in the case of the non-user of TRoA, what seems to be one of the crucial factors determining TRoA's rejection of MinForening, was the fact that the app did not offer anything new. This is despite the indication from the 8th semester project also involving members of TRoA, that the current ways of TRoA in forms of communication and coordina-

tion is not ideal for their needs. In this project informant R and M both mentioned that they see it as unlikely that TRoA will adopt the app because it does not offer TRoA anything new , as Informant M explains: "*The problem is that if you need an app or technology today to move people, you'll either have something that is something new that has not been seen before and that is not MinForening or I have not been presented for it because as of now, it doesn't have a functionality that I cannot do in a different way*." (Appendix B p. 15)

Informant R came with a similar statement saying: "*Again as I said, I still think it could have a future if it got some resource management, if it added some new functionality (*that Facebook do not have*), then I can see it having a future in an organization like ours."* (Appendix B p. 15)

With these statements, it could be reasonable to belief that a positive in *Performance Expectancy* alone is not enough to convince an organization to adapt a technology, but there need to be a certain amount of novelty in regards to a technology and its functionalities, for it to of interest to an organization.

Study limitations

This project and the research that have been conducted in relation to it, is not without it limitation, and in order ensure transparency and good research etiquette as stated earlier in the chapter concerning ethics, these limitation will now be examined.

The first issue to be discussed is the representation of the social groups related to MinForening in the collection of data. For this project, is was only possible to get in touch with four of the relevant social groups namely; the users (PGU runners), the staff of MinForening and the non-user/potential users in the form of TRoA. As can be seen in the actor network of the relevant social groups these just some of the groups that exist in relation to the MinForening app, by failing to include the other relevant social groups in the collection of data. Thereby missing important perspectives and inputs from these groups leading to a conclusion that does not hold truth other all relevant social groups. This issue with concerning relevant social groups is also discussed in the article by Klein & Kleinman (2002), where it is mentioned as a common critique of SCOT, which views all social groups a fails to take into consideration what the article describe as "power asymmetry" amongst the group (the idea that no group are controlling or suppressing others). This is while at the same time assuming all relevant groups are represented and able to participate shaping of the technology (Klein & Kleinman, 2002). Another matter that needs to be examined is the lack of diversity amongst the informants. Five out of the six informants whose testimonies are used in this project are male under the age of forty, with the remaining informant being a middle-aged woman. This issue is also addressed by Klein & Kleinmann (2002) where they argue that some social groups may in fact consist of smaller sub-

groups with other concerns than the main group, which claims to speak on their behaft (Klein & Kleinman, 2002).

Another limitation if this project can be found in the formulation of the interview guide. During the interviews it became clear that some of the research questions where less than ideal, especially the questions regarding *social influences* and *hedonic motivation. I*n the interviews with the informants from MinForening and TRoA, it was proven to be default to angel into relevance question for these two groups of informants, since these factors in the UTAUT are primarily aimed at the users perspective. The issue could have been resolved with the help of a pilot interview prior to the data collection, where it would be possible to try out the interview guide and discover which questions work and which should either be removed or altered to better suit the purpose of the interview (Brinkmann & Tanggaard, 2010). However this was not possible due to the time frame of the project, and the loose structure of the interview themselves provided enough room for improvising to alter and tweak the questions to better suit the situation.

Conclusion

This project have investigated what factors lead to either the acceptance or rejection of technology, by using a combination of the theory and methodology of SCOT with concepts from UTAUT. The case study was of the company MinForening and their app which have been developed to help voluntary organizations communicate and coordinate internally between the organization and it members. The data collection consisted of two interviews with some informants working with MinForening, two interviews with members from the voluntary organization of TRoA, whose organization had rejected app, and a visit to PGU Runners, an organization who uses the app. The data was collected with the intent to analyze it using the factors affecting user acceptance from the UTAUT to determine why MinForening had been successfully accepted by PGU Runners but rejected by TRoA, as well as to uncover any problems and conflicts experienced by either of the informants in relation to the app.

The purpose of the project was to find an answer to the problem statement, which was:

"This project is a case study that through Social Constructivism of Technology and the Unified Theory of Acceptance and Use of Technology, seeks to understand why some people will accept a technology and why others will not."

In conjunction with the problem statement, four research questions were formulated to help guide the research process in answering the problem statement.

The first question was to utilize the principles of SCOT to analyze what different social groups there exist in relation to MinForening. This was done in order to get a better understanding of the social aspects of MinForening, and who different social groups are connected to the app and to each other. The result of this analysis was a network that showed 5 groups in immediate relation to MinForening. These groups were Users, MinForening Corporation, Potential users, Non-Users, and Ex-users, which connected to each other or to some of additional sub-groups under each main group.

Whit the actor network of the relevant social groups done, the next research question was an analysis of the accounts from the informants concerning the app and their experiences of them in relation to the factors of user acceptance from the UTAUT. The analysis resulted in a division of accounts that influence the acceptance and use of MinForening in a positive direction and those that influence the acceptance and use of MinForening in a negative direction.

The third research question was to combine the result form research question 1 and 2 to create an actor network of the different problems experienced by the different social groups. This was done to get an overview of which problems affected which groups, and to understand how one problem might be affecting different social groups.

Lastly the result from research question 1-3 was compare in the discussion and compared to the projects theoretical framework in order to determine when/why the of MinForening has been a success, and when/why it has failed. The result of the discussion was that the successful acceptance of the technology by PGU Runners was mainly due to the fact, that the factors effecting user acceptance (from UTAUT) had been positive in their interaction with the app, and that the problems they experienced in relation to the app, were not severe enough to hinder acceptance. The actor network of the problems related to MinForening (corporation) revealed some problems, that could be the source of unsuccessful acceptance by the users, and solving them could lead to a more successful app.

Some surprising results were revealed during this project. The first was the importance of individual in the successful acceptance of technology in organizations, and the importance of informant S in initiating the implementation of MinForening into PGU Runners. The second surprising result was the significance of "novelty" in relation to user acceptance of smartphone apps. It was learned from the informants form TRoA, that one of the main reasons they did not see the app as being useful for TRoA, was because the app did not offer any new functions than for example Facebook cannot. In TRoA's case, this could be a way to manage their physical resources.

This project had tried to lead to an understanding of how technology can be accepted by the users or what factors can lead to a failed adaptation, by investigating the relevant social groups and their experience with the technology. Further research would be needed to investigate the experienced from all the different social groups in order to get a more complete aspect of the factors leading to user acceptance of technology.

Future perspective

Looking beyond the scope of this project, there are some interesting perspectives to investigate in extension to the results of this project.

As mentioned in the conclusion, an obvious step would be to investigate the perspectives of the social groups not included in this project, in order to uncover any missing perspective that might be significant to the user acceptance of MinForening. It would be beneficial to include other VO's of different varieties as well as making sure the demographic of the informants are diverse enough to not result in any particular biases.

Another future perspective are in relation to the surprise findings of the project, where it would be necessary to conduct other case studies regarding the acceptance of the technology (MinForening app), in order to determine if the results can be generalized to a broader perspective. If this is proven to be the case, that could mean a whole new approach to user acceptance of technology where the role of individuals as a catalyst, will be an important factor to consider when analyzing acceptance of technology in an voluntary organizational setting. The same is applicable to the idea of "novelty" as an important factor in the acceptance or rejection of mobile apps, where it is relevant to investigate if apps that offer something new to the user in forms of functionalities and design, are more likely to be accepted than those who only focuses on replacing part of existing app, or seeks to replace them entirely.

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Overview of appendix

Appendix A – Interview Guides

Appendix B - Transcription of interviews

Appendix C - Interview and Fieldtrip Coding

Appendix D - Analysis of Interview and Fieldtrip