Master's Thesis for Jeppe Hjersing Knudsen & Martin Geertsen
Engineering Psychology 10^{th} semester

Development Of The TonePrint Community: A case study in user involvment

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Contents

Chapter 1

Introduction

The purpose of user involvement in the design process of any given product is to develop a product that's easy to interact with for the regular user. A common problem with having engineers design these products is that they are experts in technology but are limited in their understanding of people. As a result the final product may be designed logically according to their understanding but may not match the understanding of the users (Norman 2013, p. 6). User experience designers (UX) intend to counter this issue as full members of the design process by applying knowledge of the users, providing more relevant and meaningful experiences for them (Foundation 2019). However, there still seems to be some misconception to this among classical engineers, both from a simple web search of the vast amount of forums covering UX and from personal experience. This chapter will therefore start with an interpretation of user involvement in the design process with regards to the terms *user experience design* and *usability* before moving on to the scope of this project.

1.1 The benefits of user centered design

The term *user experience* was originally coined by Don Norman in 1993 while working at apple. He defined it as everything that touches upon the user's experience with the product from first acquiring it to actually interacting with it and later evaluating this experience (Norman 2019). Numerous interpretations have since been formulated with *allaboutux.org* containing a vast amount of these. Despite the differences in phrasing, what seems to be a common trait for these is that UX should be considered a broader term also covering other terms such as usability (UX 2019). By investigating an ISO standard on human-centered design for interactive systems, this is emphazised, as UX is defined as *a person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service.* Three notes further elaborates how this includes all aspects of the person's emotions, beliefs, preferences, etc. (ISO 2010, p. 3). In the same ISO standard, usability is defined as *the extend to which a product can be used by specified goals with effectiveness, efficiency and satisfaction in a specified context.* (ISO 2010). These standards support that UX is the broader term to other terms as usability.

Designing with a user-centered approach holds multiple benefits. Reka (2017) describes these with regards to both the benefits for the users but also for the design process in general and the members. For example, by having UX designers in the design team they can first of all apply the necessary understanding of users that classical engineers don't possess, as previously mentioned. By understanding the users, the UX designers will then be able to understand the problems they may face by observing the way they interact with the system in question. Secondly, sales increase when products satisfies users. Designers develop products from their own mental model of how they think the product should look, and how it should behave. The designers expect the users to have an identical model to them, but since the user typically can't speak with the designer, the burden of communicating this model lies solely on the product itself including documentations and manuals (Norman 2013, p. 31). If it isn't clear to the users how they interact with the product, they won't have a satisfying experience with it. However, if the appropriate information is available to make the product understandable and usable, especially in situations when things go wrong and needs to be corrected, then the user is more likely to have a pleasent experience (Norman 2013, p. 32). Finally the design team itself can also benefit from the involvement of a UX designer. The better understanding of the users' needs the design team have, the better their basis is for estimating the required amount of time and money for both development and subsequent maintenance of the product (Reka 2017).

Despite the outlined benefits of a user-centered approach to the design process, it is not yet fully integrated in the industry, and the reason for this lies in the difference of how the academic world develops methods for UX and usability testing, and how the industry utilizes these. Dennis Wixon stated in 2003 that *"The literature evaluating usability methods is fundamentally flawed by its lack of relevance to applied usability work"* (Wixon 2003), this supports the concept of a gap between academia and industry. Several studies have since been made on this with Øvad and Larsen (2015) being of interest. The purpose of this study was to investigate how 8 different companies changed how they worked within the fields of UX and usability over a period of 2 years. Interviews were held in 2013 and 2015 to uncover a positive development in the companies' understanding of UX and usability during these two years. Almost all of the companies had developed or were developing ways of implementing UX in their design process with examples such as low-fi prototyping, usability testing, workshops, personas, expert evaluations, etc. (Øvad and Larsen 2015, p. 48). in correlation with this, it is important to emphasize that almost all of these companies follows the agile *Scrum* framework in their design process, which means that development is carried out as an iterative process in the form of sprints with the option of going back and making changes to the product in between these.

More papers have recently been released on this topic and the challenges facing it. In a paper by Silva et al. (2018), the focus is on analyzing the evolution and current state of agile UX to provide a brief overview of theses challenges yet to be solved. It also takes its starting point in the increasing attention UX has gotten in the last 16

years, as designers and developers do understand the importance of each others work but don't know how to synchronize their daily operations in a meaningful way. As previously mentioned, the challenge lies in making UX relevant to the specific work in focus, but the challenge also lies in making everyone in the design team understand UX as a team discipline rather than a role in the team. As such, a more thorough understanding of UX and the agile framework is required to help both fields reach a shared understanding of each other (Silva et al. 2018, p. 2). For Persson et al. (2018) the focus is specifically on how UX and agility contribute to each other. The notion is that what helps a software developer to be agile may not help a UX consultant to be agile in the same way and vice versa. This is already well addressed as true, and the findings presented in the study further supports this notion. The study was conducted in an unspecified danish software company with *Conboy's theory of agility* as research approach, which is elaborated on in the paper (Persson et al. 2018, p. 3). The study showed that the two practices contributed substantially different to agility for UX consultants and developers in correlation with different aspects of the design process. Finally, by consulting Nielsen Norman Group it is clear that despite the tendency of UX professionals perceiving Scrum meetings as barriers to productivity, they should still be involved in these meetings to stay engaged and aware of what's going on in the team (Kaley 2019). It proposes that UX should take part in the scrum framework equivalently to any other member of the design team. This includes daily meetings addressing the questions *what did you do yesterday? what will you do today?* and *what is in your way?* This is considered important, as UX designers usually are working ahead of the engineering team on how the product should be shaped. Furthermore, the UX designers should also engage in the work of the other members of the team, as UX designers may be able to help resolve potential issues they may face.

1.2 Focus of the project

It is by now well addressed, that user involvement is a growing trend in software companies, and has been in the last 16 years, whether it is in the form of UX or usability testing. This project intends to investigate this topic of user involvement in the industry in collaboration with a danish company interested in employing these approaches, TC Electronic.

TC Electronic is a worldwide known manufacturer of effect units for guitarists, originally formed in the early 1970's by Kim and John Rishøj in Aarhus, Denmark. Besides effect units, they also develop other audio equipment such as amplifiers, sound and picture production systems, and broadcast systems (Electronic 2019). The project group has worked with TC electronic in previous studies and as such knows that they don't have a dedicated strategy for implementing UX in their design process, but they are interested in implementing it in their existing organization.

The collaboration was agreed upon through dialogue with TC Electronic themselves, as they are frequent producers of project proposals for Engineering Psychology. After

some mail correspondence and a meeting at their headquarters, a scope for the project was agreed upon. It's of interest for TC Electronic to explore the application of user involvement in the design of a future product related to their popular TonePrint pedals, which will be elaborated on in the next section.

1.2.1 The Scrum framework

As previously stated, much of the problem with employing a proper UX strategy in software development companies is due to UX not reconciling well with the agile scrum framework. The development teams of TC Electronic also employs this framework, and as such it seems fit to provide a proper description of it.

The scrum framework has gained popularity in the industry of developing software and hardware, as it has contributed to faster market times, greater flexibility, higher-quality products, and customer satisfaction (Gonçalves 2018, p. 40). The overall concept is that the work is split into development iterations referred to as *sprints*. These periods are typically of one month or less where a clear objective is set up and carried out by the *Scrum team* which consists of the members of the development team. There are three different roles for the members, each expected to be self-organizing and cross-functional without being dependent on others outside the team (Gonçalves 2018, p. 41).

- **The Scrum Master** serves, much as the name indicates, as the leader of the Scrum Team. His primary objective is to make sure that the work to be done is understood and carried out by the Scrum Team.
- **The Product Owner** focuses on maximizing the work of the development team. He manages the list of requirements that the end product must meet, also known as the *The Product Backlog*. This includes defining the backlog items and prioritizing them in order to optimize the value of the work done by the development team
- **The Development Team** consists of the remaining members of the Scrum Team, which typically is three professionals. Their goal is to execute the objectives established by The Product Owner and Scrum Master, and have them done by the end of sprint.

The sprint starts with the initial planning by the members of the scrum team. During this phase they determine realistic goals for the sprint in correlation with what they want to achieve. The steps required to achieve their goals for the sprint are then determined from the backlog items as well through discussions with the product owner. When this is settled, the sprint starts. During the sprint, the team sets aside 15 minutes every day in order to synchronize activities and develop a plan for the next 24 hours. this is simply referred to as *The Daily Scrum* (Gonçalves 2018, p. 41). By the end of the sprint, the period is reviewed by the team in order to evaluate what has been achieved during the sprint, and what still needs to be done in order to complete the current sprint within the assigned time frame. Finally, a retrospective meeting inspects the sprint in order to discuss possible improvements for the next sprint to come. Figure 1.1 provides a graphical elaboration of this process.

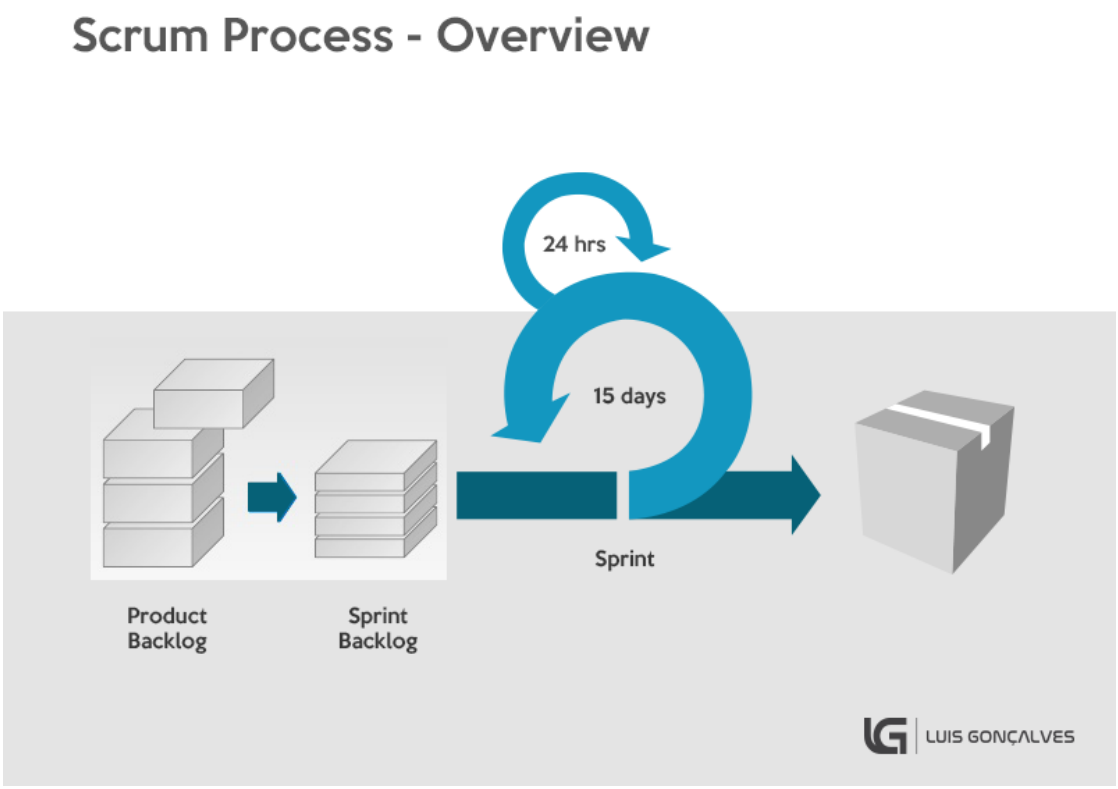

Figure 1.1: a graphical overview of the Scrum Process. `https://luis-goncalves.com/what-is-scrum-methodology/`

1.3 The TonePrint concept

Effect pedals in general are well known units for guitarists and bassists alike, spanding multiple music genres. The pedal works by taking the input signal from the guitar and changing it to the tweaking by the users. Depending on the effect type, and when playing, the user activates these changes by a single button on the pedal. An example of a simple guitar effect pedal is displayed on Figure 1.2, where the adjustable parameters on it consists of *Dwell, Mix,* and *Tone*. Each of these are accessed and tweaked with individual knobs on the unit, which gives the user a limited range of ways to change the sound. With this limitation as a motivation, TC created the TonePrint concept, enabling users to tweak the sound of effects beyond the parameters on the pedals. Using the TonePrint application, the users have a vast selection of custom presets with further parameters available for tweaking. These presets are what the term *TonePrint* covers and they are either created in collaboration with professional musicians or by the common user. In order to distinguish these from each other, they are referred to as *Artist TonePrints* and *User TonePrints* respectively. After selecting one for the effect pedal in question, the

user can make any desired tweaking or transfer it directly to the pedal with the option of altering it even more on the physical knobs (Andersen 2012). TC has collaborated with multiple guitarists and bassists, creating TonePrints for effect pedals used by the artists themselves. After the creators are satisfied with their TonePrints, they are uploaded to the TonePrint library in the application where any users of the same effect pedal can download the TonePrint and as such match the sound of their favourite artist. For User TonePrints the overall concept is the same. They differ in the fact that the creator isn't a famous guitarist, but the TonePrint is still made using the application and can be transferred directly to its effect pedal. However, when it comes to sharing these User TonePrint with friends and other aspiring guitarist, a platform for this purpose doesn't exist yet.

Figure 1.2: This figure shows a Drip spring reverb effect pedal by TC Electronic `https://www.tcelectronic.com/Categories/Tcelectronic/Guitar/Stompboxes/DRIP-SPRING-REVERB/p/P0CQ2#googtrans(en|en)`.

1.3.1 The TonePrint Software

As previously stated, the exploring of TonePrints start with the TonePrint application available for smartphones and tablets. However, the software is also available for PC and MAC, and the reason for this distinction lies in the difference of how a TonePrint is transferred to its respective pedal. For PC and MAC the user is required to use a cable from the computer to the pedal, but through the tablet and smartphone application, the user also have the option of beaming it directly to the pedal. whatever the platform, however, when opening the software the user is introduced to a list selection of different effect pedals, each holding a vast number of TonePrints created by famous guitarists. After selecting an effect pedal from this list, the user is then presented a new list selection of the many guitarist who have created TonePrints for this pedal. When selecting one of the guitarists, and depending on whether the guitarist have created more TonePrints for the same pedal, the user is then presented a bigger view of this specific TonePrint with a description of it and its creator. An example of this is displayed on Figure 1.3.

Depending on the users' motivation when opening the application first time, they can also choose to browse by artist instead of pedal, if their starting point is to find out what it takes to sound like their favourite artist.

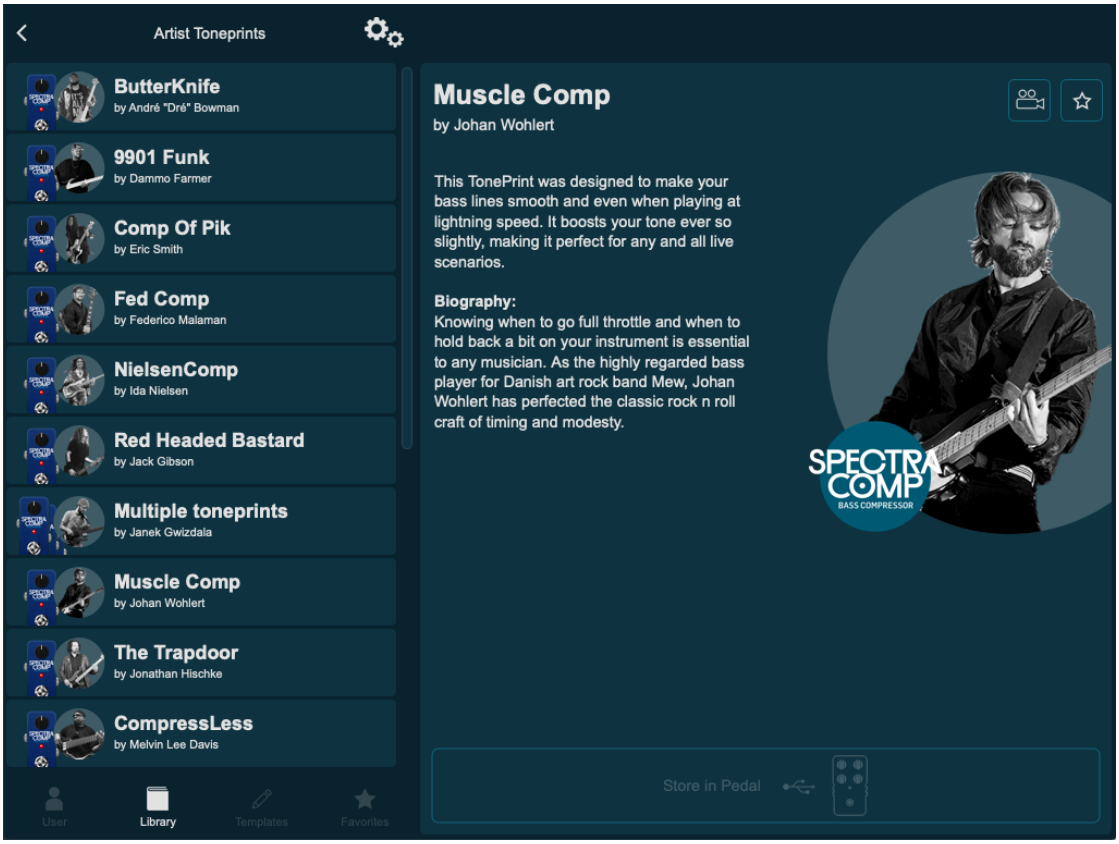

Figure 1.3: The view in the TonePrint application after selecting an effect pedal and a TonePrint. This example displays a TonePrint created by Johan Wohlert of the danish rock band *Mew*.

Chapter 2

Exploring the TonePrint application

Before being able to help TC Electronic with using user centered design methods in their development process, it's necessary to examine the current trend of the development process. Different methods could be used to examines this process, which all have advantages and disadvantages. Some of the methods will be discussed, before selecting one.

Observational study

An observational study is a classic method used in field studies. This could be used to observe the entire development team, in order to analyze their every day work process, and the overall development process. This allows the observer to create a understanding of development process, which isn't biased by the individuals of the development team, whom might have problems recalling every aspects of the process. However would a classic observational study not allow the observers to gain knowledge of the background of the individual team members decisions. There is however a method which have many things in common with classical observational studies, which is contextual inquiry. In contextual inquiry your normally observing the use of a product in the target environment and by it's target user, to analyze usability. Besides the observation part of this method, it also relay on the observer to interview the user, while he or she is interacting with the product. This enables the observer to get a better understanding of what user are thinking. This could be used in observing the development process, where the process wold be observed, and team members would be interviewed when the observers would find it relevant. The disadvantage with this method is however that the development process is quit long. An observational study will take to time consuming, if it should be able to cover the broadness of the development process.

Workshop

Her skal det beskrives hvordan en workshop kunne bruges til at analysere TC's udviklings proces. Gennem en workshop wille man kunne få de forskellige udviklere til at udføre opgaver meget lig, opgaver der kunne fremkomme i udviklings processen, for at se hvordan

de griper dem and. De kunne også blive sat til at "Spille" sig selv, for at derved at vise hvordan de gjort. En ulempe ved denne metode er dog at det ville være at dataen måske ikke er så pålidelige, som ved eventuelle interview hvor de selv siger hvordan de har gjort.

Interview

Her skal det beskrives at et interview med TC's udviklere ville kunne give et billede på hvordan de har udviklet tidligere produkter, for at få et indblik i deres proces. Her vil det være logisk at tage udgangspunkt i TonePrint appen, da den har flere aspekter til fælles med community idéen. Ved interviews kan det være en ulempe at nogle ting kan være glemt og at nogle spørgsmål passer bedre til forskellige udviklere, da de har siddet med forskellige opgaver, hvilke vi vil imødekomme med at lave det semistruktureret, så vi kan gå nemt i dybten med hvad de enkelte har haft fokus på.

- Vi vil gerne have en bedre forståelse af TonePrint appen, hvorfor det?
  - Generelt skal det bruges til at forberede os på interviewet.
  - Vi leder efter faldgrupper i appen, som vi kan snakke om i interviewet.
  - Vi ved altså allerede på det her tidspunkt, at vi har tænkt os at lave interviews.
- Vi leder efter forskellige metoder til dette formål
  - Er det usability, UX eller noget tredje, vi leder efter?
  - For usability/UX kan man lave brugerinddragelse
  - Dette er dog tidskrævende
  - I stedet kan man lave en heuristisk evaluering
  - Alternative metoder til heuristisk evaluering?
- Vi går med at lave en heuristisk evaluering
  - Formålet - Vi skal udpege faldgrupperne
  - Udover, at det hjælper os, fungerer det også som et studie af appen for dem.
  - Derfor skal vi overveje, hvordan vi beskriver problemerne, så det er gavnligt.
  - Hvad er formålet med de forskellige platforme?
- Resultat og analyse
  - De cirkulære slidere - Bruger vi den rigtige analogi?
  - Rop synes, vi også bør udpege de ting, der fungerer godt.
- Konklusion - Hvordan hjælper dette os i forhold til interviewet?
  - Vandt nogle forskelle på tværs af platforme.

– Tyder på en løs tilgang til det og måske en mangel på kommunikation internt

2.1 Heuristic evaluation

For at kunne stille de bedst mulige spørgsmål om udviklingen a TonePrint appen vælger vi at lave en heursitks evaluering af appen. Den vil hjælpe med at kaste lys over usability problemer, som vi så kan spørge ind til. Her vil det muligvis blive tydeligt hvordan en manglende brugerinddragelse har haft en effekt på deres udvikling.
I denne sektion vil teorien, fremgangsmåden og heuristikkerne blive forklaret.

2.2 Heuristic Evaluation Results

The results of the heuristic evaluation are presented in categories of what usability heuristic they may violate....

Visibility of system status

- When browsing through the available TonePrints for artists, some of them may have created the same TonePrint settings for multiple pedals. Clicking between these doesn't provide any clear feedback to which is selected however, as the description of the TonePrint is the same whichever pedal it is set for.

- There is a lack of indication to which instrument is selected, as this selection happens in settings and not in the list itself. If either *guitar* or *bass* is selected under the instrument filter, and not *all*, the message in the list *"all TonePrints by..."* is misleading, as the user is only going to find TonePrints for one instruments.

- When pressing *user* on the computer application there are no indications of what to do next. The user is just presented a blank column with nothing in it.

- When selecting the **Helix Phaser** with the *guitar* filter active on the computer app, nothing happens. When trying this on the Iphone app, it opens one TonePrint, and when opening it on an android unit, the app crashes.

- When pressing the video icon on the android and computer app, it isn't clear that the unit will open youtube in a web browser compared to the Iphone app.

Match between systems and the real world

- The sliders for the various parameters are all presented as circular sliders, but interaction with them are done by pressing the center of it and swiping up or down. As such there is a risk of grabbing the entire canvas and not the parameter in question.

- It appears to still be possible to select bass TonePrints with the *guitar* filter active.

User control and freedom

- Nothing here...

Consistency and standards

- Some artists have published the same TonePrint for multiple pedals and when switching between these, the text description is the same. However, in some cases there is a noticeable difference when doing these switch, as some of the descriptions has minor spelling or typeset errors, even though they should be identical.

- When opening a video description of a TonePrint with its creator on the smartphone app, it is presented in a new window. When opening one in the computer app, it passes you on to the given video on youtube.

- When browsing TonePrints, there are different buttons in the top right corner of the description page, depending on on the TonePrint.

- When watching a video description of a TonePrint on the Iphone app and the user at some point wants to return to the list of TonePrints or artists, it demands two different interactions. First, the user must swipe down in order to return to the TonePrint description, before either swiping right or pressing *back* to get back to the list view.

- When choosing the **SpectraComp Bass Compressor** with the *guitar* filter on, the user dosen't get the same menu as when choosing other pedals. This is probably due to it being a bass effect.

- When creating a favourites list, the TonePrints are sorted by pedal name, even if the user selects *sort by artist*.

- When opening the app on an android unit, the user gets informed that he needs a midi connection. This message doesn't appear on the desktop version, even though the same goes for that.

- The user has a search functionality available on the android system but not on either the desktop or Iphone version.

Error prevention

- The typical confirmation dialogue of either ✓ or × is presented to the users with these icons inside the button on the Iphone app. As such it isn't clear whether the

user selects an action when it is visible, or if this visibility means that it is already selected.

- When the user is beaming a TonePrint to the pedal, he is given the instruction: *If your pedal flashed like this beaming was a succes.* In order to follow this instruction the user would have to focus on the pedal, and by doing this he wouldn't have seen this instruction in the first place. As such, the user has to focus on two things at once.

- The user can assign different parameters to the same physical button on the pedal, allowing for live editing of the TonePrint. However, the pedal comes with a print above the knob on the pedal itself, which can't change. As such, the user can potentially edit a parameter, even though the knob says something different.

Recognition rather than recall

- When switching between *browse by product* and *browse by artist*, this has to be done under settings, and the same goes for switching between type of instrument. Instead of having this filtering action visible with the list, the user must remember to check this in the settings menu.

Flexibility and efficiency of use

- In general there are limited ways of customising the canvas, for example the favourite list.

- The search functionality on the android app only allows for searching in the open menu, making it almost redundant. The user still needs to to go to the right menu before searching for specifics, making scrolling a faster way of finding the right TonePrint.

Aesthetic and minimalist design

- It's limited to what extend the size of the canvas can be expanded on the computer app. If it is made full-screen it will no long match the size of the window and take all the space. Instead, the far right of the window will just be a blank column of nothing.

- When opening the computer application, until something is chosen, the screen will primarily be just blank.

Help users recognise, diagnose, and recover from errors

- Nothing here...

Help and documentation

- When choosing *Editor Help*, the user is sent to the main TonePrint webpage.

Chapter 3

The Design process of TC Electronic

Som beskrevet i chapter 2 har vi valgt at lave et interview for at undersøge udviklings processen ved TC. Ud fra den heuristiske evalueringer har vi fået en forståelse for nogle problemer ved TonePrint appe, hvilket giver grundlag for nogle af spørgsmålende i det følgende interview.

3.1 Interview with TC

Introduction

Formålet med dette interview er, at vi gerne vil have et indblik i jeres udviklingsproces af TonePrint appen, da fokusset for vores projekt er at kigge på, hvordan et fremtidigt TonePrint community kan udvikles. Interviewet kommer til at foregå under et semistruktureret format. Det vil sige, at vi har forberedt nogle spørgsmål, men hvis du har nogle pludselige indskydelser eller ekstra informationer, du tænker vil være relevante, så skal du endelig ikke holde dig tilbage med disse.

For at vi kan holde styr på de mange informationer, vi må få ud af interviewet, kunne vi godt tænke os at lydoptage det. I den forbindelse, vil vi selvfølgelig gerne høre, om det er ok med dig? Optagelserne har til formål at hjælpe os videre i processen med vores projekt, og dit navn vil på ingen måde fremgå af vores dokumentation.

- Da i udviklede konceptet for TonePrint appen, hvordan besluttede i hvilke funktioner der skulle være med og hvordan de skulle designes?
- Hvordan har jeres viden angående jeres brugere påvirket udviklingen af TonePrint appen, og hvor har i den viden fra?
- Gjorde i noget for at målrette TonePrint appen mod bestemte brugergrupper, og hvordan gjorde i det i såfald?
- Selvom TonePrint appen er et ret unikt produkt har i så draget inspiration fra

andre interne eller eksterne produkter, og i så fald hvordan?

- Hvordan besluttede i jer for informationsstrukturen i TonePrint appen, både set i forhold til menustrukturen og de forskellige måder de kan kategoriseres på?
- I har en meget stor database af både TonePrints, pedaler, kunstnere og videoer. Hvordan besluttede i jer for, hvordan i håndterer og præsenterer de forskellige data?
- Hvilken data vil du mene er nødvendig for at kunne gøre et TonePrint community med User TonePrints effektiv, og hvordan vil du mene denne data skal struktureres og kategoriseres.
- Hvad ligger til grunde for forskellen på appen fra platform til platform? Eksempelvis informationen om ikke tilsluttet pedal, søge funktionen, video visning og TonePrint information samt beaming?
- Hvad er formålet med tekstbeskrivelserne tilhørende de forskellige TonePrints, og hvordan beslutter i jer for, hvad der skal stå?

- Hvilken type feedback får i vedrørende TonePrint editoren, og hvordan bruger i denne feedback?
- Til hvilken grad bruger i informationer, i får gennem TonePrint-junkies-facebook-siden, youtube eller music tribe community?
- Meget har ændret sig op til den nuværende app. Hvorfor ændrede i både den grafiske identitet og flere features?
- Hvilke positive og negative effekter har jeres SCRUM arbejdsmetode haft på udviklingen af TonePrint appen?
- Hvilke teknologiske begrænsninger har i haft under udviklingen af TonePrint editoren, og hvordan har i kompenseret for disse?
- Hvordan opstillede i kravene for TonePrint appen, både konceptuelt og design mæssigt?
- Hvordan opstillede i målsætninger for TonePrint appen? og hvordan sikrede i jer, at disse blev nået?

- Hvis du skulle nævne fem vigtige aspekter som vi bør tage med videre i udviklingen af et TonePrint Community, hvad skulle det så være?

Chapter 4

Thematic Analysis

4.1 Method

- Til et semistrukturet interview er det svært at følge en prædifeneret analyse, da man ikke ved hvilken vej interviewet tager.
- Vi valgte den tematiske analyse fordi man kunne komme godt ned i ens data og laver et overblik, før man analyserede.
- Beskriv stepne fra kilden.

4.2 Themes

As described in (Braun and Clark (lav kilde)) does the thematic analysis create a understanding of the interview data by thoroughly coding the transcribed interview data, whereafter the codes are used to create themes, that can be used to interpret the interview.

The four interviews were given a total of 272 codes, from which several codes did cover more than one interesting aspect and is hence present in more than one theme. As result of an iterative process of dividing the codes into themes, a total of 35 themes were created. Some of the themes are strongly connected by addressing some of the same areas, but are divided to create more specific themes rater than to general. The themes are in danish and is shown in Table **??**. This is followed by a description of the theme.

Beaming App	Ikke inspireret af andre	Udviklingsværktøj	Parameterdesign	Rollefordeling / Hieraki
Prioritering af features	Beslutning på baggrund af test	Erfaring fra tidligere produkter	Målrettet mod brugergrupper	Beslutning på baggrund af antagelser
Beslutning på baggrund af bekvemmelighed	Kommunikation i udvikling af app	Forretningsmodel	marketing TonePrint beskrivelse	TonePrint koncept
Parametre UI	Ingen brugerinddragelse	Beslutning på baggrund af personlige holdninger	Inspiration af eksterne Produkter	Rod
UI design	Brugerinddragelse	Eksterne udviklere	Brugerfeedback	Brugerinddragelse
Community efterspørgelse	Community tags	Tilbageholdt deling	Community beslutning	Feedback om langsom app
Fokus på brugere og brugervenlighed	Prioritering af TonePrint appen	Samarbejde med kunstnere	Tekniske begrænsninger	Ingen målsætninger i forhold til TonePrint appen

Table 4.1: Themes overview

Beaming App

This theme describes that TC Electronic earlier had a TonePrint app which did not include a TonePrint editor part, that allowed the creation of User TonePrints. The app consisted of a library with Artist TonePrints that could be filtered for guitar or bass, and with it the options to beam the TonePrint through the instruments pickups to the pedal.

No inspiration from others (Ikke inspireret af andre)

This is a small theme containing comments that TC Electronic hasn't taken inspiration from other products, neither external nor internal, for the development of the TonePrint app. However is on commenting that on of the sister companies has a product with some similarity, but he don't think that it has worked as inspiration.

Development tool (Udviklingsværktøj)

The TonePrint concept and the editor is a evolution of system that have been a part of TC Electronics for a long time. The system Virtuel Front was a system that TC Electronic used to create new pedals, by determine the values of different parameters of the product and determine which parameters the users could alter with the physical knobs. This system was not anything that TC offered to their costumers. This system

was very complicated, and was mostly used by the audio engineers at TC Electronic. In the beginning of the development the TonePrint concept, Virtuel Front was used to set the parameters of the TonePrints and has since been developed to become the current editor.

Parameter Design (Parameterdesign)

Given the way that TC Electronics products work, is the different parameters of the audio settings set by models, described as Meta Models. This models is what is altered to define the sound of the products. A problem at TC Electronic has been to make the models readable for the users e.g. how gain is controlled, with labels, intervals etc. These models is what the editor is altering and that have given a problem, because TC Electronics still have to hide some of the models, to avoid showing all of their concept and risk being copied.

Roll allocation / hierarchic (Rollefordeling / Hieraki)

At some point in the development process, desisions has to be made, and it's commented that the product manager has the final saying. This has lead to scenarios where the programmer doesn't even know how to describe a feature because he think it's very complicated and didn't make sense to him, however has it been implemented because the decision was taken bu others. In another scenario however, did the designer insist that a feature had to be done a certain even though he was told it would be to difficult. But through dialog and stubbornness, was the feature created as the designer wanted.

Prioritizing of Features (Prioritering af features

When TC Electronics are developing new products they of cause have to plan out which features to include. Every employee can come with suggestions, and some often doe. Here they also try to listen to their uses, because when they get features recuests from their users on e.g. Facebook, is the idea stored together with the ideas from the employees. When it comes to implementing the features the decision is made upon how easy and quickly an feature is to implement, and how important the feature is. Hence are some features implemented even though it isn't very important, because it's easy and quick to implement. This does however also work the other way around whereas the community has been a feature request, almost since the beginning of the TonePrint concept. The problem has been that it was deemed to difficult and time consuming to create at the beginning, so the idea was putted away, so other easier features and task could be done.

Decisions based on test (Beslutninger på baggrund af test)

TC Electronic has conducted few user studies which have led to decisions in the development process. One time they wanted to make a certain type of pedal, on a market they weren't currently in. There fore they made a user test on a competitors product, which indicated that the interface and controls of the pedal were to complicated. This

knowledge was used to design their own pedal, which became a success. The concept of making the editor available for users, instead of just using it as a development tool, also came from a user study. Here a group a bass players were given access to the Virtuel Front section 4.2, with the task of creating a new sound for a bass amp, which resulted in a new setting for the TC products. This opened the eyes for TC Electronic for giving the users this opportunity, which became the TonePrint editor. Finally has there been conducted a user workshop for developing ideas for the TonePrint Community(Jespers rapport). This workshop has led to several ideas for which features that should be included in the community. One of the decisions is that the users shouldn't be constrained by categorize created by TC Electronic, which has led to the idea of 'tags', which has it's own theme.

Experience from former products(Erfaringer fra tidligere produkter)

This theme highlights that TC Electronic uses their prior experience which they have obtained through other products. This includes a pedal that was to complicated to use and to expensive, which resulted in a failed product. Another experience is the pedal mentioned in section 4.2, where a user test of a competitors product led to the success of their own. They have also drawn on experience when creating the TonePrint concept, because they earlier have experience that when creating complex systems, they have to make it more simple to ease the use of the product.

Focused on target group(Målrettet mod brugergrupper)

There are several target user groups for both the TonePrint concept in general, and the TonePrint Community. With the TonePrint concept there are users whom just wants a regular pedal, with which you can control the settings with the physical knobs. Then there are the users whom have a idol they wants to sound like, or just love to discover new sounds made by professionals, which is accommodated by the Artist TonePrints and templates. The third group are the "tweakers" whom like to go in depht with the different parameters and create their own TonePrints. These target groups are not anything that TC has found by doing any investigations, but was more like a gut feeling. For the community is there also a target group which are users whom wants to share their TonePrints, so that other people can use it.

Decisions based on assumptions(Beslutning på baggrund af antagelser)

This theme highlights that TC Electronic doesn't have much experience with including user studies or investigating their users. The decisions of which features to include and how to design them is mostly based on assumptions of what the users wants and what works best. Fore example is the interface for the parameter settings design, because it was mend to be the most natural way to design it. In total is it clear that they base their development on assumptions of the users need, abilities and wishes.

Decision based on conviviality(Beslutning på baggrund af bekvemlighed)

Here to scenarios are mentioned where conviviality have played a role in how a decision was made. Firstly is the idea of implementing links to to youtupe and the likes, when creating a TonePrint for the community. This is something they are almost sure they will include, because they already have the technology to implement it. The second scenario is that when they design new solutions have the orpotunity to test different ideas, if the implementation is easy enough, otherwise wouldn't they test the ideas first.

Communication in the development of an app (Kommunikation i udviklingen af en app)

It seams like there hasn't been a perfect communication between all members of the development team, when creating the TonePrint App. It's found that the differences that are depending on which platform that is used, stems from individual programmers for each platform, whom have used their 'artistic freedom' and are allocated on different teams. However some of the difference is depending on what is commonly used at the specific platform. Another example is that the designer of the parameters interface didn't know how they worked when he designed them, so he designed a interface for something he didn't understand, which he felt was problematic.

Business model (Forretningsmodel)

The TonePrint concept enables TC Electronic to always upgrade their product, by adding new content, in the form of new artists and templates. In this theme it's also highlighted that TC is a business, whom have to separate from their otherwise competitors, which also i way they made a user test of competing product, section 4.2.

Marketing / TonePrint description(Marketing / TonePrintbeskrivelse)

For every TonePrint in the library is there a text description which tells something about the artist and the specific TonePrint. The ideas to what is ridden in thous descriptions normally stems from the crew whom are with the artist under the description of the TonePrint. But in any cases is the marketing team going through it to ensure it fits its purpose. The aim with these descriptions is to engage the users and to make them want to try out the TonePrint. Also does it help give some information about the purpose of the settings in the TonePrint. The description part is also important when looking at the TonePrint Community, because there could easily come alot of TonePrints, where these descriptions can help the users sort out which ones they want to try.

TonePrint Concept

The TonePrint concept have three layers which are, regular pedal adjustment, beaming of Artist TonePrints and templates and finally the creation of User TonePrints. Each of

these layers aspires to different target groups section 4.2.[1].

UI design specifications

When going from the former TonePrint editor to the current alot of the UI has been changed. Earlier every interaction has been controlled with sliders, and there were a problem with mapping the sliders and how they affected the parameter. Another problem with the old design was that the sliders took up alot of space, which would be very messy for a phone size interface. So the focus of the new design was also to make it more user friendly.
Currently a problem that is discussed is the lack of information at for each parameter. There is no information of what a parameter changes, so the only way to figure this out is to try new settings and listen. To accommodate this problem are they discussing groupings and descriptions, which in the end should enable the user to better understand how to interact with the sliders to reach a desired effect.[2]

No user involvement (Ingen brugerinddragelse)

This is a very small theme which only highlights that TC Electronic hasn't used much user involvement and decisions are made without including the users.

Decisions based on personal opinions (Beslutning på baggrand af personlige holdninger)

Much of TC Electronics development is based on personal opinions in the development teams. This theme shades further light on the fact that there is little communication with the users of the systems. The decisions on how to design the informational structure and how to design the TonePrint app, was all based on gut feeling. Gut feeling seams to be a important part of how decisions are taken at TC Electronic.

Inspiration from external products (Inspiration af eksterne produkter)

In this theme it's become clear that TC Electronic have been looking at other companies for inspiration for the TonePrint Community. They are looking at Yamahas Soundmondo and Fyres Effects, which both have some sort of community. From their search have they discovered that having a 'like' system, can result in many effects not being presented, because they haven't been rated yet. When looking at others solutions, they find both inspiration, and what works and what doesn't.

Mess (Rod)

This theme contain codes which aren't found useful and will not be described further.

[1] Tag den her senere
[2] Anything IMPORTANT missing

4.2.1 Native UI / Slow app feedback (Feedback om langsom app)

After releasing the newest TonePrint app did TC Electronic receive some negative feedback. Many users had a problem with the app being so slow that it was almost useless. This was a result trying to make a unified solution for both android and iphone. TC took the problem very seriously, and repaired the problem, be making separated UI solutions.

User involvement (Brugerinddragelse)

As seen in section 4.2 isn't user involvement completely new to TC Electronic. The development of the TonePrint Editor was based on a user study, where bass players had the opportunity to create a new effect for a bass amp. Another example is the user focus group workshop described in (JESPERS KILDE), which purpose was to shad light on what users wold like with a TonePrint Community. A repeating thing in the this theme is that they want to give the users what they wants and involving the users, are to figure out what they want the most.

External developers (Eksterne udviklere)

TC Electronic have earlier used designers and developers, whom haven't been a employee to create a product. The first TonePrint app was designed by an external designer, but implemented by TCs own programmer.

User feedback (Brugerfeedback)

There are typically to ways that TC receives feedback from their users, through their facebook site 'TonePrint Junkies' and their Music Tribe Community Forum. They receive a lot of feedback regarding feature requests, which they are noting down, so that it might be looked at, in their next development phase. The feedback is also related to problems regarding their products. Every member of the development team is a member of the facebook site, so that they have some user contact, but most of the feedback they are receiving has been through the marketing team, whom selects whats needed to be resolved.

Community demand (Community efterspørgsel)

From the beginning of the TonePrint concept has there been a request from the users, to enable a way of sharing TonePrints with each other. TC Electronic has acknowledged this request for a while, but as mentioned in section 4.2 has it been a to big a task for them earlier. Now they are beginning to start the development of this community, because they see it as a matter of time, before the users finds another solution.

Detain sharing (Tilbageholdt deling)

Since the users started requesting a TonePrint Community have TC Electronic locked the files which forms the TonePrint. This has been done because they wanted to bee

in charge of the sharing of the TonePrints. This has led to some users making creative workarounds, where they have shared pictures of their settings, so that they may be copied.

Community tags

One feature that seams to be a major interest for the TonePrint Community, is a feature referred to, as 'tags'. The scope is that a users should put some tags on a new TonePrint he or she just have created, which should make it easier to find for the other users. Some suggest that the users should be completely free to create their own tags, without limitations. Others suggest that there should be an number of options to chose from. They are however aware that there could be a problem because tags can be misleading, given they may describe something that is subjective. At TC Electronic this is seen as a very important feature to get right.

4.2.2 Community Features 'Not tags'

Besides the feature of tagging TonePrints is there a general idea of creating a follow or subscribe feature. This would enable users to follow other users and be updated when he or she creates new TonePrints. This may generate motivation to be more active on the community, and give the users the opportunity to become idols them selves. Being able to make descriptions of the TonePrints and linking to soundcloude or youtube is also a feature they think will help motivating the use of the community. Most of the ideas for the community relies on the users having an account, which currently isn't a part of the TonePRint concept, which means they also have to create data bases for this. [3]

Community decision (Community beslutning)

This is a very broad theme where different decisions and ideas for the community in general. One decision which they don't fully agree on yet is how and how much the community should be integrated in the current TonePrint app. Some argue that having it as a fully integrated system with the community being a option, on the same level as the editor part in the current version, will make the system easier to use. Others argue that it should be divided, so that a few of the sharing/uploading thing are in the app, but the rest of the "social media" features, are a thing on its own.
A decision they seams to agree upon is that they want to involve the users in the development of the community, to ensure that they meet the users wishes and expectations.

Focus on users and user friendliness (Fokus på brugere og brugervenlighed)

This theme underline that TC Electronic have some knowledge of their users and that they wants their users to easily be able to use their products, even though they haven't

[3] Den her bør vi kigge mere på, da de features der er her i kan sættes op som en model for communitiet

included them much in their development so fare. There are some comments mentioning that the users and user friendliness are a focus, however doesn't it seam like there are a understanding of how and why.

Prioritizing of the TonePrint app (Prioritering af TonePrint appen)

The TonePrint app has become a product prioritized on the same level as the other products at TC Electronics, even though it's a free product. This has resulted in more resources has been allocated to the development. A result of this has also been that the development of the community at one point has been pushed further away.

SCRUM

It's very clear from this theme that the agile development method SCRUM plays a major role in the development at TC Electronics. Each sprint is three weeks, and they are quiet strict on following the sprint rhythm. Up to a sprint they check the backlog tp ensure they have the right thing of interest, and it's in the backlog new feature request ends up, if they are deemed necessary to implement. If a task seams to take longer than that of the deadline, it's deconstructed into smaller tasks, which than is transferred to the next sprint log.
There is an overall agreement that the SCRUM method are beneficail for the development team. They seams to agree that it helps focus on the right task at the given time, because they dond't have to think on the tasks, which are planed for the following sprint. [4]

No objectives in relation to the TonePrint app (Ingen målsætninger i forhold til TonePrint appen)

It seams like there aren't any milestones for the TonePrint app, neither in terms of downloads, use ore reputation.

4.3 Interview conclusions

Som resultat af analysen kan det ses at SCRUM er en meget vigitg del af mentaliteten hos TC og at den måde at opsætte krav for sprints og prioritere features, har ens stor betydning for deres udviklings process. Det virker til at den erfaring de har fra tidligere brugerinddragelse har være meget god, dog ikke den ene gang med Jesper, hvor det virker til at timingen har været forkert. Det virker til at de har en idé om hvem deres brugere er, dog uden helt at vide det, samtidig med at de ikke rigtig har erfaring med at målrette efter bestemte brugere når de designer, da de mener at TonePrint konseptet aspirere nok til deres brugere. Det ses at de har en masse idéer til TonePrint communitiet, hvor de fleste er enige om at det med Tags, er en vigtig del at få undersøgt og lavet.

[4] Man kan måske gå mere i dybten, men det vil jeg hellere i Resultat/interview konklusionen

Chapter 5

Community concept

I dette kapitel skal konceptet bag TonePrint communitiet forklares med udgangspunkt i at der tilsidst skal tages et valg af hvilken det vi skal hjælpe med at udvikle.

5.1 Conceptual model

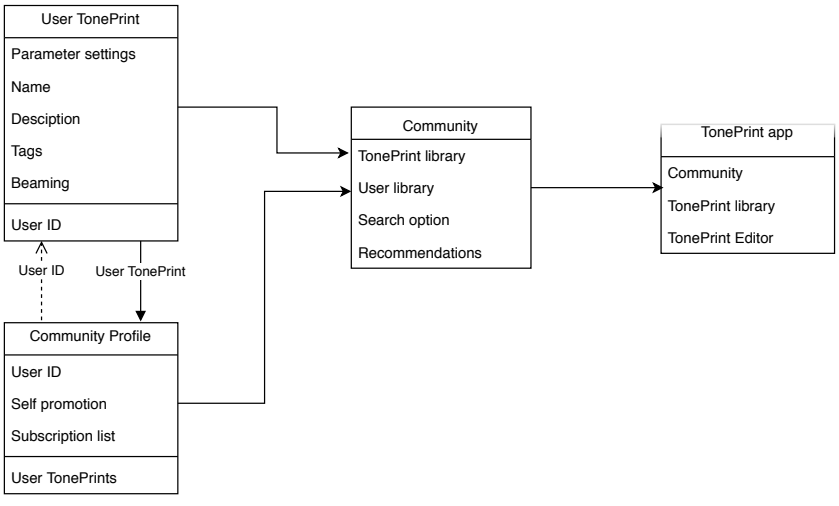

Figure 5.1: a graphical overview of the TonePrint Community concept

5.1.1 Use case

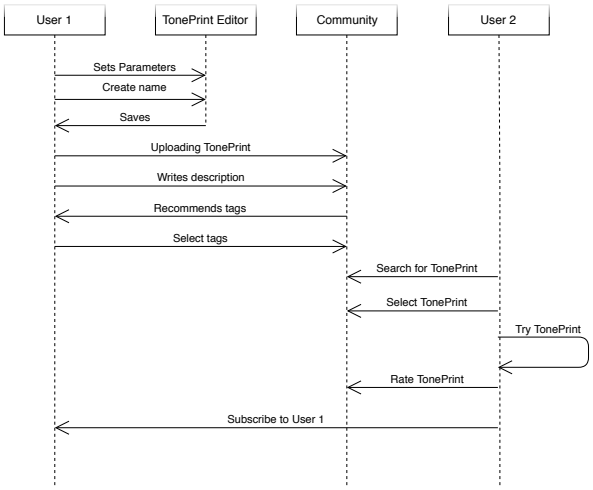

Figure 5.2: a graphical overview of the TonePrint Community use case

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