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 following master's thesis takes its starting point in the TonePrint concept from TC Electronic (from here on referred to as *TC*). Its reveal in 2011 opened a new playground for musicians and tone tweakers, making effect editing possible from the users smartphone. Until this point, TC was already a worldwide known manufacturer of effect pedals for guitarists, originally formed in the early 1970's by Kim and John Rishøj in Aarhus, Denmark. With this as the baseline for the thesis, the focus will be on the future for this concept, starting with a general description of effect units and the capabilities of TonePrints.

1.1 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 as to the user's tweaking. Tweaking can be of different parameters depending on the effect type, and when playing, the user activates these changes by a push of a single button on the pedal. An example of a simple guitar effect pedal is displayed on Figure 1.1, 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 1.1: This figure shows a Drip spring reverb effect pedal by TC Electronics `https://www.tcelectronic.com/Categories/Tcelectronic/Guitar/Stompboxes/DRIP-SPRING-REVERB/p/P0CQ2#googtrans(en|en)`.

1.1.1 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 simply 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 1.2. 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.

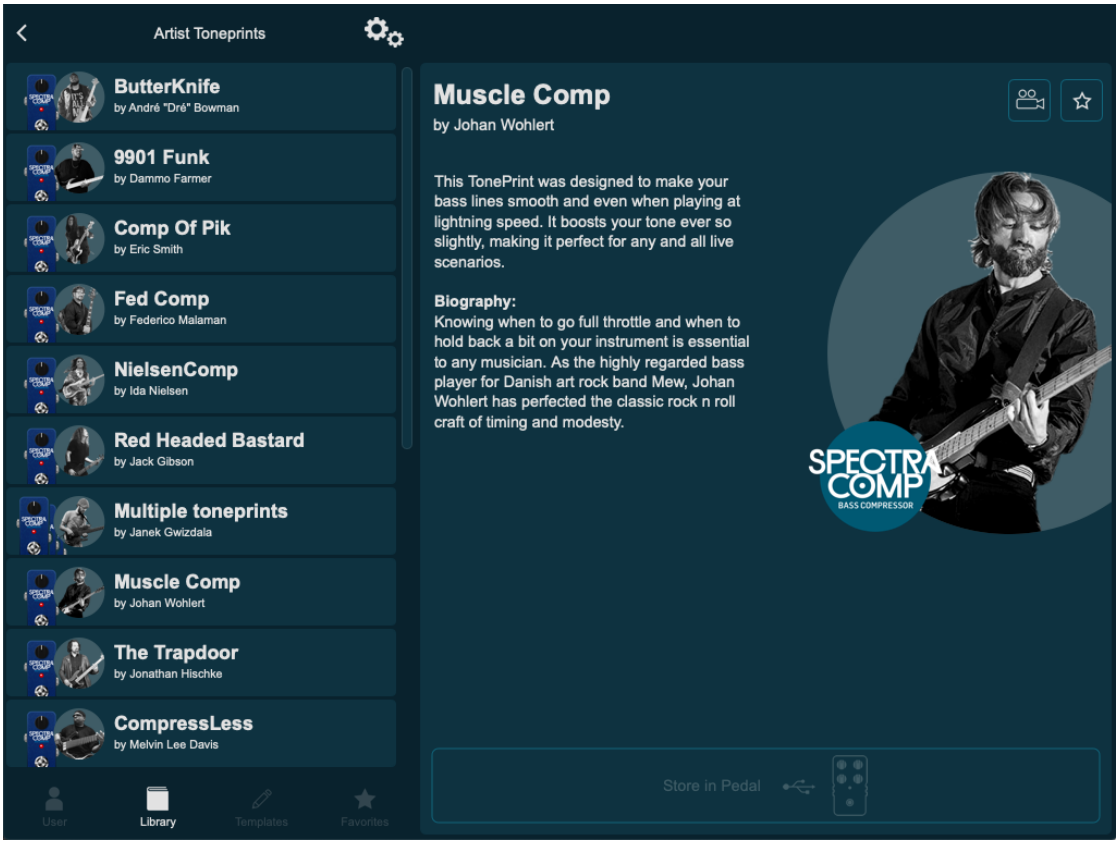

Figure 1.2: The view in the TonePrint application after selecting an effect pedal and a TonePrint. This example displays a TonePrint created by Johan Wohlert of the danish rock band *Mew*.

Chapter 2

The Design process of TC Electronic

As it is presented in the project proposals for this master's thesis, the focus is on investigating how a company such as TC Electronic can apply user inputs for the design of future products, before applying this knowledge on the specific case of the TonePrint community. Such an investigation firstly requires a look into the design process of the development teams at TC Electronic, in order to assess how and to what extend user involvement can be applied.

Acquiring inputs from the targeted users of a product is in general considered beneficial for its development, as these inputs can help, the developers better understand the users needs and requirements. This enables them to counter otherwise problematic design choices. When users interact with new products they form a mental model of how the interaction should be done through their existing knowledge, general practice, and the provided instructions. The most ideal thing though would be to talk directly with the designer of the product, but since this isn't an option, they must rely on the available information from the product itself (Norman 2013, p. 31). If the mental model of the users and the conceptual model of the developer don't match, it isn't guaranteed that the users will interact easily with the product.

Involving the users in the design process may as such solve this issue, and depending on what the focus of such user involvement is, there are numerous ways of doing it. For the planning process, it is desired to know the possibilities and limitation for the various factors such as the overall focus for the involvement, possible time limitations, the number of available users, etc. and these may be influenced by the general design process at TC Electronic. In order to map this design process, interviews with different members of the TC staff will be conducted, and as such get a better understanding of any possibilities and limitations of user involvement at TC.

2.1 Interview with TC

Firstly it seems relevant to ask TC what they're hoping to acquire from user involvement in general, more specifically, what kind of information are they hoping to get from the users? Questions concerning this could be:

- Når i udvikler, hvordan inkorporerer i så jeres viden om brugerne?
- Er der nogle informationer om jeres "target users" som i føler i mangler, når i udvikler produkter?
- Er det forskelligt fra produkt til produkt, hvilken information om brugerne i har brug for, og i så fald hvad er forskellen?

In correlation with this, it also seems relevant to focus on TC's own understanding of their target users. How do they apply their knowledge of them in the design process, and what factors play a role in this, such as genre, geography, economy, gender, etc. Questions concerning this could be:

- Den nuværende viden i har om jeres brugere, hvordan har i tilegnet jer den?
- Hvordan spiller forskellen på brugergrupper ind, når i udvikler produkter?
  - Tilpasser i produkterne til forskellige brugergrupper? (geografi, køn, osv.)
  - Hvordan målretter i jeres produkter mod den ønskede slutbruger
- Har i tidligere gjort brug af brugerinddragelse som interviews, spørgeskemaer, workshops eller lignende, og hvad er jeres erfaring med det?

Next the focus should be on the organisation of TC, in order to find out when users can be involved. By asking about what tools they use in their developing process (both their planning and execution of these) it will be easier to plan when eventual user studies can be conducted and how cumbersome and time consuming they can be. Questions concerning this could be:

- Hvor fast er fremgangsmåden for jeres designprocesser?
- Hvad er den typiske procedure for jeres udvikling af produkter?
- Er der forskel på, hvordan i udvikler produkter alt efter hvilken type det er?
- Hvordan har kendskabet til domænet indflydelse på jeres udvikling/design af produkter?
- anvender i nogle bestemte metoder/værktøjer i jeres arbejdsproces?
- Hvordan planlægger i udviklingsprocessen for et produkt?

Finally, the goals and demands that TC set for their products should be explored. How are these applied in the product development, and how do they measure whether they have been reached? This probably is close to the questions regarding who the users are, as a goal just as well may be that the product is user friendly. Nevertheless it is still considered of value to include. Questions concerning this could be:

- Hvordan opstiller i krav og succeskriterier for jeres produkter?
- Medregner i brugen i jeres krav? eller brugerne i jeres succeskriterier? hvis ikke, hvorfor sÂ ikke?

- Hvordan indsamler i feedback om jeres produkter?
- Hvilke succeskriterier og krav ser i som de vigtigste for brugerne, og hvordan ville i kunne bruge feedback herom?

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