Ole-Birger Neergård

Designing for Listening

Exploring New Interactions in Music Streaming

Master of Design: Interaction Design
Oslo School of Architecture and Design
Diploma Spring 2018
Ole-Birger Neergård

Designing for Listening

Exploring New Interactions in Music Streaming

Master of Design: Interaction Design
Oslo School of Architecture and Design
Diploma Spring 2018
Ole-Birger Neergård

Main supervisors:
Jørn Knutsen
Einar Sneve Martinussen

Secondary supervisor:
Birgitta Cappelen

Collaborator:
TIDAL Music AS

Oslo School of Architecture and Design
Spring 2018
This diploma project is about exploring the current state of music streaming, and looking into how it could be improved. Through this exploration I have looked into if any new interactions and features could be introduced in today’s streaming services, and giving the listeners new opportunities in their music consumption.

Through this explorative design process, I have looked into how people listen to music and use different streaming services today, and if they are missing something, knowingly or unknowingly. The diploma delivery consists of a wide range of concepts, prototypes and designs, all based on interviews and research. These concepts are focused not only on app and web design, but touch upon things like advertising, awareness campaigns, micro-interactions and even marketing strategies.

The context of the Diploma is the field of streaming services, both from the listener’s, artist’s and a music business actor’s view. The Diploma is therefore done in collaboration with TIDAL. TIDAL is a music streaming service based in Oslo. TIDAL stands out from their competitors by offering high definition audio and curated content by a team of music journalists. In many ways TIDAL is a more high-end alternative to services like Spotify and Apple Music. I have written and designed parts of the Diploma in TIDAL’s Oslo office. Though the Diploma is done in Oslo, I hope to see that the results are of an international kind, relevant to not only the Norwegian market. The Diploma is relevant for today’s streaming market, with plenty of concepts that could easily be seen as incremental and realistic features for the music streaming climate of 2018. Some ideas are more comprehensive than others, but are still designed to be relevant for streaming services as of today.

The reasons for choosing this topic for my Diploma are many. First of all, there are so many unanswered questions in the field of music streaming. There are issues with artists not getting paid enough for their music, there are issues with the way the streaming services affect the way we listen, on how the music market seems oversaturated, the list goes on and on. Not a day goes by without seeing new articles on these topics. In addition to the fact that there are plenty of interesting problems to be solved, my personal motivation is because of my passionate relation to music, a relation that has evolved into part time jobs as a music producer, DJ and vinyl store worker, as well as owning a continuously growing record collection. My plan is to work in the crossing point between music and design when I graduate, something my design portfolio strongly documents.

By using an explorative design process, I will deliver a wide range of ideas, concepts, prototypes and designs. The deliverables will be based on interviews and research, and focus not solely on app and
web design, but could also include things like advertising, awareness campaigns, physical objects and even marketing strategies. The app designs will be focused on mobile and desktop. All these concepts and designs will be working towards the same goal, to explore new interactions and possibilities within music streaming in general, and TIDAL in specific.

The outcome is this report, showing the process, the insights and the deliveries of the Diploma. Other contributions are a presentation of user interviews collected in a database, a collection of user feedback as well as conversations with people from various aspects of the music business. The report also presents an analysis of the streaming services in today’s market and what separates them and makes each one unique. A wide range of concepts, ideas and designs based on these interviews and research is another key contribution, all of which is aimed towards creating new interactions and possibilities in the music streaming market, both for listeners, artists and music business actors. As well as introducing these new interactions, the Diploma also problematizes some of the challenges with the designs of today’s services and the music business.

This project is an exploration of new interactions and possibilities that could make music streaming a better place for listeners, artists and business actors. The Diploma presents suggestions for both incremental and comprehensive changes to today’s services, presented in a realistic way and based on actual needs and interesting reflections by people on all sides of the table.

This report starts off by introducing the candidate, the collaborator and the scope in Chapter 1, and continues by framing the project, presenting the problem formulation, the context and the relevance of the Diploma in Chapter 2.

Further on, this report will dive into the broad research and interviews that eventually led to developing three personas in Chapter 3.

Chapter 4 is a presentation of the analysis that has been done, both in comparing and understanding streaming services, reading various metadata, and investigating how streaming businesses pay artists for their music.

Further on, four chapters of concepts and ideas will be presented. All concepts will be tied to one or multiple personas and situations to give them a context, and there will also be a rating between the complexity of the suggested action and the effect it may cause.

The concept chapters will be starting off with how it is to enter TIDAL for the first time in Chapter 5.1. The next part, Chapter 5.2 is focused around music discovery, before a range of prototypes on the quality of listening is presented in Chapter 5.3. The last chapter of concepts, Chapter 5.4, is based on new business and marketing models, before the Diploma will be concluded and reflected upon in Chapter 6.
# Table of Contents

1 **Introduction** 11  1.1 Candidate 12  1.2 About TIDAL 13  1.3 First Scope 14  

2 **Frame** 15  2.1 Problem Statement 16  2.2 Framing 16  2.3 Target Users 17  2.4 Context 18  2.5 Relevance 19  2.6 Design Methods and Planning 20  2.7 Frame Summary 22  

3 **Research** 23  3.0 Introduction 24  3.1 Reading 26  3.2 Expert Interviews 28  3.3 HiFi Testing 34  3.4 User Interviews 35  3.5 TIDAL Reviews 38  3.6 Situations 39  3.7 Personas 40  3.8 Research Summary 42  

4 **Analysis** 43  4.0 Introduction 44  4.1 Streaming Services 46  4.2 Comparing Searches 51  4.3 Smart Phone Sensors 52  4.4 Understanding TIDAL 53  4.5 Credits Metadata 54  4.6 Royalties Analysis 56  4.7 Analysis Reflection 62
1. Introduction

Get to know the candidate, the collaborator and the first scope
Introduction

1.1 Candidate

A short introduction to who I am as a designer, student, music enthusiast and Diploma candidate.

I have my design background from AHO, which has given me insight and knowledge about everything from industrial design to systems thinking, tangible interactions, service design and even some programming in addition to the interaction design that I have my expertise in.

I have a big passion for music, which has shined through during my education at AHO, so it’s very exciting for me to be able to do my Diploma in the crossing between music and interaction design. I have done a few projects within the field of interaction design in music earlier. These projects have been very interesting to work on and I am proud of the results. So doing a music related task for my Diploma will also summarize my time at AHO quite well. Being able to invest half a year of work in this theme that I’m so interested in, is very motivating, to say the least.

I can bring something extra to the table because of my background from studying Music Technology at NTNU and working as a music producer, DJ and record store employee. My favorite genres of music are jazz, soul and hip hop, and I play piano, synthesizers and saxophone, and have been doing so for most of my life. Because of my background in music, I also have a large network of people that can be resourceful to the project.

On a general level, I really enjoy and need to be creative. Both in sketching and designing, in writing and in composing and producing music. Doing an explorative Diploma like this will let me use and combine many of my skills to create a diverse and interesting project.

Ole-Birger Neergård
15.01.1992

Phone:
+47 932 99 933

Mail:
ole.birger.neergard@gmail.com

CV:
linkedin.com/in/ole-birger-neergard
1.2 About TIDAL

I have chosen to collaborate with TIDAL, a music streaming service based in Oslo. Working with an actual streaming business can make the diploma both useful and realistic.

TIDAL is one of the most used streaming services in Norway, and it is also an important actor globally in today’s music business. By working with TIDAL, I will get the opportunity to learn about the music streaming business from the inside.

TIDAL is based on Wimp, which was a early Norwegian streaming service. Wimp was then bought by S. Carter Enterprises (owned by rapper Jay-Z) in 2015, and changed its name to TIDAL, launched as the first artist-owned streaming platform. TIDAL claims to focus more on artists’ rights and the sustainability of the music business than their competitors. TIDAL not being the market leader could also give them room to create new features to potentially attract more people to their service.

The fact that TIDAL is based in Oslo, just a ten-minute walk from AHO, is also very convenient. TIDAL’s Oslo office has previously collaborated with students from Westerdals, so they are not new to working with students on projects like this one. I have been offered a desk to work with my diploma in their offices, and will definitely accept that to learn as much as possible.
1.3 First Scope

During the Pre-Diploma course I defined a scope that I wanted to work with, to create a new feature, or a set of new features, to today’s streaming services.

The initial scope of this diploma project is about looking at how we listen to music, how we live with the music, share music, how artists can interact with their audience and the other way around. The project will look into how technology shapes the way we listen and consume music, exploring what could be different about today’s music market, which new features could be introduced to streaming services, and how we could design for a music business where both artists and listeners get what they need.

It will be important to create a delivery that is meaningful to both TIDAL and to me, so we will construct the specific case description together. They will send me some examples of themes they would like me to take a look at, and we will find out which problem area that will be the most interesting. Following are some of the topics that I find interesting.

The streaming services have facilitated for different ways of sharing music, but which ways of sharing would be most interesting for the users? How can music bring people together? How do people use music to communicate, to establish an identity, and how well do people with matching taste in music get along? How can artists interact with their audience, and how can the listeners interact with the artists and other listeners in a meaningful way?

At the moment, most streaming services place an artist’s most popular songs first. What could be other ways of sorting music? Could the listener help the artists or streaming services arrange the music in a better way? Could the waveforms of the music be used to tell the listener what to expect, or for the listener or artist to express their feelings about the music at a certain point?

Should streaming services facilitate for full-album listening? Technology has always affected the ways we listen to music. The last few years the album format has seemed to be less and less important, and playlists and single releases are increasingly popular. The album format has been praised for decades, but in correlation to our shorter attention span, listening to a full-length albums has been replaced with more effective ways of listening. Does the album format need to be saved, and if so, how could we design for full-album listening?

I wish to design one or several new features that could build on TIDAL, something that could fit into the product TIDAL provides today. I want the diploma to result in an add-on or improvement to TIDAL’s service, based on my research, insights and competencies as a interaction designer.
2. Frame

Defining the Diploma’s context, relevance and methods
2.1 Problem Statement

How can new digital interfaces engage, uncover and enhance new opportunities, interactions and new experiences within music streaming?

2.2 Framing

This problem statement is addressed through an explorative and open ended design process. The frame is focused on exploring the current state of music streaming, and looking into how it could be improved, from the listener’s, the artist’s and the music business’ point of view.

Through this exploration I have looked into if any new interactions and features could be introduced in today’s streaming services, and explored giving the listeners new opportunities in their music consumption. I will explore how people listen to music and use streaming services today, and find out if they are missing something.

Upon early talks with TIDAL, they want me to investigate how to introduce HiFi audio to more users, young people in particular. The first framing includes looking into that, as well as exploring how music streaming can be more engaging and entertaining for the listener, and more sustainable for the artists and the industry. The outcome of the Diploma will be an exploration consisting of a series of insights, ideas, concepts, prototypes and designs, with a varying degree of complexity.
2.3 Target Users

When working with a real streaming service, there are also real users involved. These are the people I will be designing for.

TIDAL is a large company, and has a high number of monthly users. I wish to work with designing for the actual users of the streaming service, and not restrict my scope to only working with one age group or demographic.

Based on my talks with the product team at TIDAL, one typical Norwegian TIDAL user is the male 30-year-plus hi-fi enthusiast. In the U.S. the situation is different, where the typical TIDAL users are the young hip hop listeners, because of several exclusive TIDAL releases by important rap and RnB artists. That tells me that different geographics have different markets, also within one service, and I should have that in consideration during my Diploma.

The product team at TIDAL suggested me to focus on young adults, and introduce them to their service and HiFi audio. That could be a part of the solution, but I decide to look broader than that, and rather base my focus on research and talks with users. Talking to a high number of users in all ages and develop a set of relevant personas seems like a good way to continue.
The context of the Diploma is the fields of streaming services, both from the listener’s, the artists’ and a music business actor’s view.

By exploring the context of the listener I wish to understand the situations for listening better, and try to introduce new opportunities and new ways to interact with the streaming channel and the artists. The artist’s role has changed a lot since music streaming was introduced. I will explore this new reality for musicians and look into what challenges they are facing. In the music streaming competition, TIDAL stands out from their competitors by offering high definition audio and curated content by a team of music journalists.

By designing new features within TIDAL’s offering, the designs, ideas, concepts and prototypes will be relevant for today’s streaming market. Most of the concepts could be seen as incremental and realistic features for the music streaming climate of today. Some ideas will be more comprehensive than others, but are still within the context of the streaming services of 2018. Since music streaming is as relevant as ever, I hope to see that the results are of an international kind, relevant to not only the Norwegian market.

We are in an age where music streaming is the most used way of listening to music, but it’s still considered as new technology, and the services are changing a lot from year to year. That makes this Diploma relevant and well-timed, since it’s not too late to make an impact on how we should interact with our streaming services in the years to come.
The topic of music streaming is more relevant than ever before. Throughout this Diploma period, hardly a day went by without new articles and debates on music streaming appearing in my news feeds.

There are many reasons for why it’s a relevant topic, but to summarize, the streaming services have changed the way we listen to music, the amount we are willing to pay for music, and it even changed the way artists make music. All of these radical changes happened in just a few years.

The last few months, I have come across articles about how streaming has affected the album format, and how we now listen to playlists instead of albums. I’ve read about metadata in music streaming, as Spotify introduced their “Spotify Credits” this spring. Speaking of metadata, I also read about how classical music and jazz is forgotten in the way streaming services present music today. One article explained how music streaming even affected the way song titles are being written.

One journalist explained how Spotify’s Discover Weekly revolutionized music discovery for him, and another journalist explained how digitalization totally ruins the music business. However I read that the music business is performing better than ever in 2018, but that several streaming services still are on the verge of bankruptcy. I’ve seen visualisations of what streaming services pay artists per stream of a song, and read stories about scammers that created "fake music", streamed it all day on a large number of computers, and cheated Spotify of over a million dollars.

I’ve read that Spotify is soon going to be a Public Business, and what that could mean for the music business. I’ve read about how many believe that music is the biggest casualty in the so-called “streaming war”, and that streaming services have forgotten that the product they are selling is actually the music that other people create. Therefore, there are articles on how to be a responsible music listener in 2018, and how to support the artists you love in the best way.

The issues with streaming are many, but luckily, there are even more fantastic things about music streaming: the amount of music, the availability, the price and the easy sharing. But as the last paragraphs show, there are tons of things that people wish were different in music streaming, and everyone seems to have an opinion about it. That makes a good base for an interesting Diploma project.
I was depending on a good plan to get all this work done and to reach my goals in time. The 127 days of the Diploma were planned and structured like this.

I divided the Diploma period into 18 weeks, and wrote a log and a plan from week to week. In addition I had the overall plan that was developed during the pre-diploma period (see image 1).

I used the Double Diamond tool to define when to refine and when to broaden my scope. I started off with a very open problem statement, and used the research period as a foundation for creating ideas and concepts. All of the ideas were written down in as much detail as possible, and explored and refined at a later stage. To be as explorative as possible, all ideas were accepted at this early point.

<table>
<thead>
<tr>
<th>Jan. 8th</th>
<th>May 14th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researching and mapping</td>
<td>= 1 week</td>
</tr>
<tr>
<td>User interviews and workshops</td>
<td></td>
</tr>
<tr>
<td>Ideating and developing concepts</td>
<td></td>
</tr>
<tr>
<td>Prototyping</td>
<td></td>
</tr>
<tr>
<td>User testing</td>
<td></td>
</tr>
<tr>
<td>Presentations</td>
<td></td>
</tr>
<tr>
<td>Finalizing</td>
<td></td>
</tr>
<tr>
<td>Writing for report</td>
<td></td>
</tr>
</tbody>
</table>

Image 1: Overall plan for Diploma period.
In most of my earlier design processes here at school, we started out by creating a few concepts, before narrowing that down to the single best concept, and refining that concept over and over before delivering one finished prototype. In this Diploma, the explorations of the many concepts in itself is an important delivery, along with the insights I gained along the way. The concepts do not necessarily have to be or look pixel-perfectly finished, the process and exploration of interactions is what’s important here.

Every Monday we did internal stand-ups at AHO, where we discussed our progress and process so far within a group of fellow students. We all worked on very different cases, but still always had input on each other’s work due to having these regular updates. I spent a couple days a week at school and at TIDAL to get feedback from both teachers, fellow students and the TIDAL team. Having as much as three internal supervisors was really useful. They all had their different specialized views and reflections on the project, as well as all sharing my passion for music. In addition to the supervisors, I could discuss my ideas with the design and product team at TIDAL, so I was never stuck with a problem without someone to talk to about it. I was also lucky to be able to use my musician friends for feedback, to get in touch with the right people and to get input on the many concepts.
2.7 Frame Summary

With an interesting topic, a well-known collaborator and a highly relevant theme, I was ready to start researching.

I decided to work within the context of today’s streaming services, and found that the topic of music streaming is as relevant as ever. There seem to be plenty of challenges to address, and lot of potential for new interactions and opportunities.

With the initial framing, problem statement, users, design methods and planning all set, I was ready to start researching the habits of the listeners, talking to streaming experts and learning more about the music streaming services we use today. Read more about that on the following pages.
3. Research

Talking to the music streaming users and learning from the experts
3.0 Research Introduction

To find out which challenges and issues that need to be solved in music streaming, I have done a thorough phase of research.

This chapter of research presents some of my insights after talking to around 50 users of streaming services, doing interviews with experts on different aspects of the music industry, reading up on everything from blog posts to master theses, testing TIDAL’s HiFi audio, reading user reviews in App Store, analysing the many situations of listening, and creating a set of personas based on my gained understanding of the various users and user needs.

This research is what will outline the analyses, ideas and concepts later on. Read more about the different forms of research on the following pages.
3.1 Reading

I started the Diploma period by reading and researching the current trends and challenges in music streaming.

A lot of independent artists struggle to make a living off their music in this era of streaming. The Norwegian newspaper Klassekampen recently wrote about the critically acclaimed Norwegian artist Frøkedal, who is considered to be one of Norway’s most successful pop singers (Hovda, 2018). The article, called “Mot strømmen” (Against the Stream) explained the life of a pop star in today’s musical environment, and how she did not expect to make any money off music streaming this year.

Klassekampen further explained how although Norwegian music business in total had an increase in revenue of 22% from 2011 to 2015, none of that has had an effect on royalties payments or concert ticket prices. To be able to make the same money off streaming that was possible in the days of CD sales, you have to be one of the very few most popular artists. For most Norwegian artists, there are more money in doing live shows, but there’s a limit to how many times you can perform the same music for a Norwegian audience, so there is a lot of competition to get the best gigs. Frøkedal told Klassekampen about sleepless nights of anxiety, wondering about how she would afford to pay the rent.

When music streaming arrived, in Scandinavia we were quick to embrace the new technology, but the questions of the artist’s economy have yet to be solved. If only the most commercial music makes money on streaming, that will start affecting the music makers, and the less commercial music will be less tempting to make.

Guitar player and music journalist Knut Schreiner wrote a master thesis on the recent digitalization of music (2015), and is very critical to the new channels of music consumption:

«Music as fast food is a metaphor for the new music. It’s something that’s fast and cheap, that can tempt you and give an immediate feeling of joy, but is hazardous in the long run.»

Schreiner wrote in his master thesis that TIDAL could be part of the solution to some of the problems of the digital music environment:

«You’ll find part of the answer in what TIDAL already offer to their subscribers: Better sound, exclusive and curated content and better compensation for the artists. These are values that look back to the music culture of yesterday, when buying music was about listening to an album in its entirety, on a good set of speakers, after being recommended the album in the store, and dropping a couple hundred kroners at the counter.»
How to Be a Responsible Music Fan in the Age of Streaming

Musician and writer Damon Krukowski explains how streaming services are failing artists and listeners, and what we can do to fight back.

Helt ny app fra Spotify, men ikke for oss

Ferdiglagde spillelister, og det er det.

I am being facetious, as I know exactly what I was thinking. I wanted people to hear music in the way in which I had and have been so lucky to enjoy it: contextually, communally, uninterrupted, and in the best sonic detail possible. I wanted music lovers to immerse themselves into an album that has helped shape

TASTEMAKER

How Spotify’s Discover Weekly cracked human curation at internet scale

The Problem with Muzak

Spotify’s bid to remodel an industry
3.2 Expert Interviews: Asbjørn Andersen

Asbjørn Andersen is one of TIDAL’s experts on audio quality. He explained me the basics of TIDAL’s HiFi audio and their new MQA format.

In the studio, the master files of the artist is the most personal version of the music, that’s how the music is supposed to sound. The audio quality never gets better than that. With our HiFi audio, and MQA (Master Quality Authenticated) in particular, we try to recreate the sound of the master in such a way that no audio information is lost.

Simply put, on audio formats like the CD, you lose all sound information above 22kHz, which are the brightest frequencies. The MQA files stores the information from those frequencies, so that you can hear them when it’s played on approved equipment. TIDAL is approved by MQA, so by streaming music in TIDAL, you get that better-than-CD-quality. If you also have an MQA approved amplifier and things like that, you can get even better audio.

MQA uses the phrase “Music Origami” to explain the process, which explains the compression in a good way. Like unfolding a paper, you can read more information in the MQA files the more approved audio equipment you have.

I’m really happy with our MQA offering, and I’m proud that TIDAL can present the best sound on the market. The music business seem
kind of ambivalent regarding MQA, but they are very positive to the fact that TIDAL can give better sound than the competitors, no matter what equipment you play the music through. Some people are negative to new music formats, and I can understand that, since they don’t want to replace their audio equipment.

Personally, I don’t have a lot of “overkill” sound equipment, but I do prefer music through MQA and a good pair of headphones. It’s a saying that if you want as good sound on a set of speakers as on your headphones, you will have to multiply the price with 10.

I’ve wondered if the MQA format could be a savior for the album format. Or at least that the listener gets more curious about the whole process of recording an album, how the music sounds in the studio, things like that. That it helps the listener view the album more as a piece of art than just consumer goods.

I’ve had infinite discussions with my colleagues about what we should do about skipping, playlists, song queues, if the sequence of songs on an album should be holy and unchanged, things like that. I listen to albums from beginning to end most of the time. It’s all about the order of the songs and the mood you get from listening through it.
Classical Album Sundays is a listening club that presents a new album each Sunday, and the audience listen to the album from beginning to end, on great audio equipment. I talked to the head of the Oslo office, the architect, DJ and music enthusiast Kent Horne.

There are many reasons why I arrange CAS, but the most important factor is that it provides the listener with a new (or reinvents an old) way of listening to music. Everything moves so quickly in today’s society, and the possibilities are so many. People take the easiest solutions, both in terms of audio quality, the kind of music they listen to and how deeply they connect with the music. As one of our visitors said, CAS is kind of a yoga for music enthusiasts. My wish is that people put away their daily routines when they come to our listening club. Turn off their phones, close their eyes and concentrate about the music for the hour it takes.

The feedback we get is solely positive. A lot of people get, surprisingly enough, surprised. Even if the activity is as simple and familiar as listening to a record, it feels unique and new. People hear new details in the music. They analyze the music in a new way. Our audience span from 15 to 85, but most of the people are between 30 and 50. A lot of people use it for dates, and a lot of young people come by if it’s an album that they grew up with.

I don’t believe that the album is
dead. It’s all about how the artist wants to present the music, and that moves in cycles. You get tired of hearing the short songs, so you’ll need the long ones after a while. Or the artist gets tired of making singles, and wants to produce an album. Concept albums were very popular at one point, and people will always revisit old ideas when they aren’t pleased with today’s situation.

I can agree to the fact that albums get less attention these days, but even that varies from genre to genre. Releasing an album is still the normal thing to do. The length of an album has changed with the technology, from the 40 minute vinyl record, to the 80 minute CD, but I think releasing an album, a collection of songs, will always stay relevant.

CAS is a dedication to the album, and we especially love the LP records. They represent more than good sound. It’s a ritual to play a record like that. It takes time, and somehow you have to be conscious to do it correctly. Good audio quality shows new details in the music that people haven’t heard earlier. So that’s an important part of our offer. We could have had a listening club without the audiophilia, but then we would discuss the music on other terms than what we do today.

If it was socially acceptable, I’d have a turntable at work too. When I had my own architecture office, we did that. It forced me to take short breaks from work to change from side A to side B, and I liked that. But I think that different listening formats fits different situations. Streaming is a lot different than playing records. It’s easier to be distracted, you’re only one click away from listening to something you’re associating with.

I use TIDAL HiFi, and I’m very happy with that. The MQA format could have been an alternative for CAS, but you lose the ritual aspect of it when you just press play.

The content is always more important than the audio quality. But it’s not either-or, you need both. You have the people that are addicted to sound equipment, but don’t know anything about the music they listen to. And there’s people on the other end of the scale. A lot of people are looking for the perfect sound, but end up losing contact with the music while searching for the details. I think prog and jazz listeners are more interested in sound quality than others.

Changing how people listen to music has to come from the music business. The same way people don’t want pixelated images while streaming video, people need to be provided good quality audio. I believe in giving people an opportunity to hear the difference for themselves. Suddenly they’ll hear something in the music that they haven’t heard before.
Christian Obermayer is a brilliant audio mastering technician at Strype Audio in Oslo. I wanted to hear more about his views on music streaming, audio quality, new music formats and earning money as an artist.

My relation to streaming is that I use it a little bit, I have Spotify, though I don’t like it much. When I use Spotify, it’s because I have to. I can’t stand how they advertise for and capitalize on music that other people made.

I don’t really need the high quality audio for streaming. The thing is, you get happy to hear your favorite song, no matter the medium. If you’re at a party and they play music from Spotify on the TV, if your song comes on on the radio, or if it gets played through the speaker on your cellphone. So that kind of defends the lossy audio formats and the use of streaming services.

Audio quality has to be at 320 kbps to be good enough, so Spotify are kind of lazy there, with their 192 quality. But when I’m listening on my cellphone, I’m okay with lower quality. When I’m at home, I prefer to listen in CD quality, but the original master files are the holy grail.

All the streaming services do is degrade the sound quality step by step when they get their hands on it. On the other hand, I think that the MQA format is strictly capitalist. That format is going to disappear as
quickly as it arrived, just as iTunes Masters did back in the day.

What I miss the most in today’s streaming services is the metadata. Music is an associative hobby, where a lot of the joy is about finding something you like, but finding it on your own. All the information about the contributors on the music is available, but the streaming services don’t take care of that information and give it to the listeners. What I think is missing is the background story, the high resolution cover art, the metadata, things like that. If the metadata was clickable too, it would help me discover a lot of new music.

What’s really important to include in a thesis like this is that the businesses that started the pirated music sites, are the same businesses that today run the streaming services. And as a musician, if you don’t accept the payment you get from these streaming services, you don’t have a lot you can do about it. For the listeners it’s not really important to make an artist richer by “streaming right”, they have more important things to think about.

Also, ideally, artists should make music out of the love for it, not for the money. It would be too conservative and old-fashioned to think that streaming is too cheap as well. I don’t think we should protect the music business of yesterday too much. We shouldn’t put too many boundaries on the development.
3.3 HiFi Testing

I did two listening tests to try and understand what TIDAL’s HiFi audio actually sounds like.

The tests were done in TIDAL’s offices on the headphone amplifier Sennheiser HDVD800, (that costs 18,000 NOK) and Sennheiser HD800s reference headphones (that cost 15,000 NOK). I wanted to test the MQA audio, but couldn’t find out if the sound was configured correctly. After a while I found out that the amplifier was not MQA approved, and therefore did not decode the audio correctly. I thought that internal decoding in TIDAL sounded a little bit better than in the amplifier, which Asbjørn could confirm later that day. I was proud to say that I heard the difference between CD audio and lossless audio, but then again, that was on very high-end equipment.

The second test was done with an MQA approved DAC. I tried to hear the same songs with and without MQA, but could hardly hear any difference. However, the sound was overall very good. The only difference I could hear was how the audio quality affected the spatial sounds in silent parts of the music. The MQA sounded less digital.

However, the differences are so small, that unless I get a visual confirmation that I am listening to the MQA format, I honestly couldn’t tell. This confirms my thoughts on how subtle differences like these are too vague to base a whole Diploma thesis on. I believe there are larger challenges in music streaming than audio quality alone.
3.4 User Interviews

After talking to a number of experts, I continued by talking with the average users of streaming services. I interviewed fifty people about their relation to their chosen music streaming channel to get a broad understanding of the users.

I collected the answers in a large database, and sorted and filtered the answers by the users main streaming service, supplement service, age and preferred price per month. Many other topics were then color coded for easy access to all information on a chosen subject.

"Image 3" shows that around half of the people I talked to had 100 kroner a month as their top limit as to what music streaming should cost. A handful of people believed that streaming should be free, and on the other end, six people had no trouble with paying 200 kroner or more a month.

I talked to people about audio quality (Image 4), and whether that was important or not. Just over half of the users said that, sure, audio quality is important, but that number doesn’t tell me much. I realized that some of the users’ understanding of audio quality was quite different from TIDAL’s definitions. What people consider «good quality» differs a lot, from gapless playback to the actual quality of the songwriting.

The answers I received clearly showed that there were some similarities between different users. I could start to group some of the
users based on their needs and preferences, and these user groups led to the development of my three personas, which will be introduced towards the end of this chapter. The insights from these quantitative interviews also helped me shape the concepts down the line. Therefore, each time a new concept is introduced later in the report, the concept will be argumented for by a quote from this interview database.
Hei! I samarbeid med TIDAL jobber jeg med en designmasteroppgave om streaming. Kan dere svare på noen spørsmål? Setter stor pris på alle svar!

1. Hva er ditt forhold til musikkstreaming? Nevn streamingtjenesten(e) du bruker. Hvorfor velger du den/disse? Og hva er du villig til å betale for streaming?

2. Er det noe du savner, noe du ikke forstår eller noe som irriterer deg med streaming? Hvilke funksjoner i streamingtjenesten bruker du mest?


Svar som kommentar eller som DM. Peace!
3.5 TIDAL Reviews

TIDAL let me dig into some of the feedback they had received from their customers. Here’s some of the information that I found useful from those files.

TIDAL explained how reading user reviews in App Store (Image 5) and Google Play Store revealed some issues that the customers were experiencing. By filtering out all of the negative reviews, they could find some of the painpoints in their service. Based on the reviews I read, these are some of the most interesting issues that the customers complained about:

**Missing content**
Though TIDAL has the largest catalogue on the market, some users told that they couldn’t find the music they were looking for. It could be due to problems with the search bar or how TIDAL sorts the music.

**Lyrics**
Some users miss the possibility to read the lyrics while listening to the music.

**Free subscription**
Some of TIDAL’s users want a free version of the streaming service, because they use it too little to be willing to pay the monthly tier.

**Downvoting suggestions**
Some of TIDAL’s users want the opportunity to affect the algorithms when listening to the Artist Radio. If the suggestion they get is bad, they wish to report that to improve the future suggestions.

**Equalizer**
Some users miss the possibility to adjust the levels of bass, treble or mid in the music they are listening to. Some users also miss having the MQA format available on mobile devices.

**Too much hip-hop and RnB**
There are a few users that complain about the amount of hip hop on TIDAL in comparison with rock and metal music. This could be because that the start page is quite general, where the users get a lot of the same recommendations no matter what their preferences are.

---

Image 5: App Store Reviews

**Ratings and Reviews**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Ratings</th>
<th>Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7</td>
<td>6.4K</td>
<td></td>
</tr>
</tbody>
</table>

**BEST MUSIC STREAMING PL...**
Sep 29, 2017

This is the best streaming platform in my opinion because it provides you with so much content. There are shows, podcast, livestreams and a lot more exclusive content. The playlist have gotten pretty strong since YN joined tidal. They have a tidal rising... more

**It's on its way**
Sep 7, 2017

E. Hunter

I have really enjoyed the new interface. I hope they continue to make improvements like this. Just a couple things I would really like to see is better recommendations. It would be great to have some better radio stations outside of just an artist radio, which even the artist rad... more

**My Only Problems**
Mar 22, 2018

I've been a dedicated Apple Music user for years but I'm looking for a change so I created a trial account and so far I've been loving it! Most music streaming services are similar so there really isn't anything revolutionary about another streaming... more

---
To understand how TIDAL better can recommend music for different situations, I had to figure out what these different situations were. Based on discussions with my fellow students, we found that these are some of the situations for listening to music:

**While reading or while at work**
Music is there to help you concentrate and make it more pleasant. Instrumental music is typical for reading.

**While working out**
Music should help you perform better, entertain and stimulate. The tempo, intensity, maybe even aggression of the music is important.

**For gaming**
Here the music should help you concentrate, but the tempo is very important, much like when working out.

**In your best chair with the HiFi on**
In this situation, music is there to be enjoyed and focused on. The music should be as similar to the original recording as possible. The rituals around the activity are important, but differ from person to person.

**At a party**
Music is there to create a good vibe, to stimulate laughter, encourage drinking and dancing. Commercial, easy music is typical.

**In the background while eating**
Music should create a vibe, like relaxation or romance. Typically instrumental music, or easy jazz.

**In the background of conversation**
Music should prevent the moments of awkward silence and create a stimulating mood. Typically instrumental music or pop music.

**Holidays**
Christmas music, the 17th of May, Halloween, etc. Holiday sounds all have quite different playlists.

**On my way to...**
Music should prepare you for the activity you’re going to do, and help that transition in mood and concentration. Listening to music while walking can help your attitude. For many, this is a good time for checking out new music.

**On my way from...**
Music should help you relax from the activity you just did, and help you with that transition in mood and concentration.

**For washing**
Music with compassion. Music where you can sing along, songs you already know well.

Also mentioned was music for showering, for sex, for cooking, for summer days and music for driving. This lets me know that the situations for listening varies, both from person to person, and from season to season.
3.7 Personas

Based on the insights from the quantitative interviews, the user feedback and the expert interviews, I have created a set of personas.

These personas will help me understand which concepts each user could benefit from. Look out for the Radio, Headphones and HiFi symbols throughout the report. The symbols indicate whether the concept matches the Persona’s needs or not.

The Radio Listener

**Description:**
The Radio Listener uses streaming services the same way he or she would listen to radio. Typically uses Spotify’s free subscription or shares a Spotify subscription with others. The Radio Listener listens to music weekly, but not a lot. Most of the time, he or she wants to hear new, popular music or throwback hits from the last decades. The Radio Listener listens to commercial radio a lot, typically channels like NRK P3 or NRK mP3. The Radio Listener also subscribes to many podcasts and is okay with advertisements as long as the listening is free.

**User needs:**
The Radio Listener needs a lot of good playlists, updated with the latest hits. The Radio Listener needs to not be annoyed (the Spotify skipping-lock is mentioned a lot). The Radio Listener wants an easily understandable app, and expects to find relevant music immediately after opening the app.

**TIDAL needs:**
TIDAL wishes to introduce more of these listeners to their regular subscription. TIDAL also has a lot of recommendations for new, popular content, not unlike the traditional radio stations.

The Conscious Listener

**Description:**
The Conscious Listener streams music for many hours a week. He or she pays 100kr a month, but could pay more if needed. The Conscious Listeners search for the music they want to listen to, and are aware that the way we listen to music is changing. They are skeptical, but the great availability of the music is most important. The Conscious Listener uses several different streaming services to find music, and Spotify in addition to Soundcloud and YouTube is typical. Music is a large part of The Conscious Listener’s identity.

**User needs:**
The Conscious Listener needs a rich selection of music. No ads and fair sound quality is a must. The Cons-
The Conscious Listener cares about the royalties of the artists, but doesn’t know how to affect the royalties issue. He or she needs easy offline listening for non-stop access to music.

**TIDAL needs:**
TIDAL hopes to introduce these users to TIDAL HiFi. TIDAL also wants to make The Conscious Listener a loyal customer, and the way to do it is by providing a good product.

The Audiophile

**Description:**
The Audiophile has a great listening set-up at home. Could even be a dedicated listening room. The Audiophile typically listens to jazz, classical and prog-rock music. The Audiophile often listens to albums in full, while focusing solely on the music or while working. Typically uses TIDAL HiFi for streaming, in addition to having a large collection of CDs, LPs and music DVDs.

**User needs:**
The Audiophile needs easily available MQA albums, with a clear difference between Hi-Fi, MQA and regular audio quality. Other needs are texts and information about albums and better metadata. Wants different versions of the same music, but separated and labelled well. The Audiophile needs a large selection of music, and prefers buying music on physical formats.

**TIDAL needs:**
The Audiophiles are some of the most loyal customers. How does TIDAL make them feel like they have an exclusive product? The HiFi listeners is an important user group, but it’s a quite small user group. TIDAL needs to guide them to the content they want, and to separate that from the other content. Also, passionate people make TIDAL’s HiFi solutions. It is important to make sure that that passion follows through the process and product and reaches the end user.
3.8 Research Summary

The weeks of research helped establish an understanding of the users, the streaming services and the situations of music streaming.

I quickly discovered that I wanted to work with more than just audio quality, though that’s the most important to some of the users. There are many important challenges that could potentially make a much larger impact than investigating audio quality visualisations alone.

Knut Schreiner wrote warmly about the "values that look back to the music culture of yesterday". However, I want to design for the now and the future, and work along with the new technology - not against it. There must be ways of using the great advantages of today’s streaming services, and still be able to solve some of the challenges that users and artists experience.

Talking to experts helped me understand some of these challenges, and talking to the average users helped me see both things that could be improved, but also the many great things that music streaming offers. Reading TIDAL’s user feedback was essential in understanding the specific challenges that TIDAL is working with, and discussing the situations of listening helped to understand the vast variety in contexts of music streaming.

All of this research helped me develop the three personas that will guide me through the next chapters and concepts of the Diploma. This research was also key to developing the range of concepts that will be presented later. But first, I did an analysis to understand the different streaming services better.
4. Analysis

Understanding the market, the data and the technology
4.0 Introduction

To better understand the different streaming services and the market, how streaming services pay artists, and much more, I did a number of analyses.

First off, the analysis chapter starts by comparing the different actors in the music streaming market. The comparison is based on factors like the audio quality, the number of users, the number of paying users, the number of songs available, the content besides the music, and what makes the service stand out from the competitors.

I have also compared the search engines in Spotify and TIDAL, analysed the sensors in our phones, researched the metadata credits of the music in TIDAL and analysed how different streaming service pay artists in royalties, as well as replicating TIDAL’s app to get an overview of the design and create a tool for prototyping. Read more about all of this on the following pages.
Analysis

4.1 Streaming Services

To get a better understanding of what the different streaming services offer, I analyzed and compared ten different music outlets.

Some of the data I compared was the price per month, the audio quality, the number of users, the number of paying users, the number of songs available, the payment to artists per stream, the availability, the content besides the music, and what makes the service stand out from the competitors. Some of the information was really difficult to find, which could be an insight in itself. Some of these streaming services have a reputation for being secretive, and some have also been accused of falsifying their numbers of paying users.

Out of the ten services I compared, nine of them use a so-called Pro-Rata model for paying artists. The only exception is Bandcamp, that use a User Centric model. This will be further investigated later in the analysis chapter.

Only two of the ten streaming services provide HiFi or lossless audio; TIDAL and Deezer. Deezer and TIDAL are therefore competing for a lot of the same users. Bandcamp, on the other hand, offers a lower bitrate for streaming, but provide lossless downloads of all the music you purchase. See Image 6 for a comparison of the audio quality of the different channels.

I also compared the user numbers for the different services (Image 7),
and found that there’s a obvious relation between the services that offer free listening and their user numbers. YouTube, Soundcloud and Spotify have the largest number of users. TIDAL and even Apple Music are quite small in comparison. YouTube stands out from the other services because it’s more known for its video content than the music. Still, a lot of people use YouTube for music streaming.

Three of these streaming services are very different from the others, since they let everyone upload their own content. YouTube, Soundcloud and Bandcamp all have user generated content in addition to providing much of the “professional” content of the other services. Therefore, services like Soundcloud also have a larger library of music than channels like Spotify and Apple Music, and the content span from amateur demo recordings to commercial radio hits. Of all the more traditional music streaming services, TIDAL has the largest library of music, with more than 50 million songs available (Image 8). Google Play and Amazon Music give users the opportunity to upload their local music files for online listening, but only for personal use, not for sharing with others. One user cannot listen to the songs that another user uploaded.

Most of the services also offer other content besides music. Podcasts, movies, music videos, documentaries and radio are all part of today’s streaming service. A lot of this content is exclusive for one service, like the Rap Radar podcast in TIDAL or the Beats1 Radio in Apple Music. This content has become important in separating one service from another and are key selling points.
<table>
<thead>
<tr>
<th>Medium</th>
<th>Logo</th>
<th>Free</th>
<th>HiFi</th>
<th>Audio rates:</th>
<th>Offline</th>
<th>Downloads</th>
<th>Users (1.000.000)</th>
<th>Paying users (1.000.000)</th>
<th>% free users</th>
<th>Number of songs (1.000.000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIDAL</td>
<td></td>
<td>No</td>
<td>Yes</td>
<td>1411 kbps (HiFi), 320 kbps (Premium)</td>
<td>Yes</td>
<td>Yes</td>
<td>4.2</td>
<td>4.2</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Spotify</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>256 kbps (Premium), 128 kbps (Free)</td>
<td>Yes</td>
<td>Yes</td>
<td>140</td>
<td>70</td>
<td>55 %</td>
<td>30</td>
</tr>
<tr>
<td>Deezer</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>1411 kbps (HiFi), 320 kbps (Regular)</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>6</td>
<td>57 %</td>
<td>40</td>
</tr>
<tr>
<td>Apple Music</td>
<td></td>
<td>No</td>
<td>No</td>
<td>256 kbps</td>
<td>Yes</td>
<td>Yes</td>
<td>36</td>
<td>36</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Soundcloud</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>128 kbps</td>
<td>No</td>
<td>No</td>
<td>175</td>
<td>N/A</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>YouTube</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>192 kbps</td>
<td>No</td>
<td>No</td>
<td>1002</td>
<td>N/A</td>
<td>95 %</td>
<td>N/A</td>
</tr>
<tr>
<td>Google Play Music</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>320 kbps</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td>50 %</td>
<td>40</td>
</tr>
<tr>
<td>Amazon Music</td>
<td></td>
<td>No</td>
<td>No</td>
<td>320 kbps</td>
<td>Yes</td>
<td>Yes</td>
<td>16</td>
<td>16</td>
<td>80 %</td>
<td>29</td>
</tr>
<tr>
<td>Bandcamp</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>256 kbps (1411 kbps Downloads)</td>
<td>No</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Royalties</td>
<td>Pay per stream ($)</td>
<td>Countries</td>
<td>Web</td>
<td>App</td>
<td>Desktop</td>
<td>Est.</td>
<td>Origin</td>
<td>Content besides music</td>
<td>What's Unique</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>-----</td>
<td>-----</td>
<td>---------</td>
<td>------</td>
<td>---------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,0125</td>
<td>52</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2010</td>
<td>Norway</td>
<td>Music videos, documentaries, podcasts, curated content, metadata, mixtape editor.</td>
<td>Well-curated content by music journalists. Artist-owned. Pays more per listen to artists. MQA audio. HiFi audio.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,00437</td>
<td>61</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2008</td>
<td>Sweden</td>
<td>Podcasts, metadata, videos</td>
<td>First on the marked in Norway. Biggest actor today. The defining streaming service that others are built on.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,0064</td>
<td>189</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2007</td>
<td>France</td>
<td>Lyrics</td>
<td>MQA audio. HiFi audio. TIDAL's segment competitor.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,00735</td>
<td>113</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>2015</td>
<td>USA</td>
<td>Podcasts, music videos, mixes, radio channels: Beats 1 and Apple Music Radio</td>
<td>Built-in on every iPhone, so it's an easy choice for many listeners.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0</td>
<td>Global</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>2007</td>
<td>Sweden</td>
<td>Podcasts, mixes, demo versions, non-musical content. Content uploaded by musicians themselves.</td>
<td>Allows artists on every level to upload their music/content to the world without external distribution services. Groundbreaking upon release.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,00069</td>
<td>Global</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>2005</td>
<td>USA</td>
<td>Videos, movies, documentaries, mixes, demo versions, vinyl ripped music, music videos, 24h genre mixes etc.</td>
<td>The biggest content site for videos. Everybody can upload their own content. Pays very little to the artists. Also bad for artists in terms of others uploading your copyrighted material.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,00676</td>
<td>63</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>2011</td>
<td>USA</td>
<td>Every user can upload his own library and mix with the internal songs. Google Play also distributes apps, movies and games.</td>
<td>Blending your own mp3 library with Google's music library.</td>
<td></td>
</tr>
<tr>
<td>Pro Rata</td>
<td>0,00402</td>
<td>11</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2007</td>
<td>USA</td>
<td>Works with Amazon’s Echo, Echo Dot and Tap to stream music, podcasts, radio, audibooks, news broadcasts and personal audio files uploaded to your Amazon library.</td>
<td>Blending your own mp3 library with Amazon’s music library. Works well with IoT devices. Amazon is a large distributor of books and music (and all kinds of other products) and get many music customers from that.</td>
<td></td>
</tr>
<tr>
<td>User Centric</td>
<td>0</td>
<td>Global</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>2007</td>
<td>USA</td>
<td>Mixtapes and mixes, curated content and magazine/blog, downloads in several different formats, merch sales (clothes, tapes, vinyl, CDs).</td>
<td>Pays artists directly for every purchase of a song or album. Well-curated content. Great tool for buying physical music, and many use it for previewing material before buying the physical copies.</td>
<td></td>
</tr>
</tbody>
</table>
Analysis

Image 7: Comparing user numbers

Image 8: Comparing song libraries (x 1,000,000)
4.2 Comparing Searches

To figure out how Spotify and TIDAL each sort their music, I did a comparative search analysis. By searching for the same thing in both services I started understanding what could be improved.

I gave each search result a score from 1 to 5, and summarized the numbers for the end score.

**Spotify**

Score: 33/50

Spotify’s Top Result works very well. It guesses correctly most of the time, and gives me what I’m searching for right away. When it from time to time guesses incorrectly, I have to look longer than with TIDAL to find the correct result. It’s a little annoying that Spotify promotes their own playlists along with the top result. When it’s several artist profiles under the same name, it’s hard to tell them apart. And when you misspell, Spotify is really bad at finding what you’re looking for.

**TIDAL**

Score: 27/50

TIDAL has a very clear structure for their searches, but that ends up as something negative. You don’t always want the artist suggestion first, then the song suggestion, then the album suggestion, and the other content in the end. TIDAL also needs a few seconds to give me the final result of my search. And before the final result is finished, you get presented something that’s less accurate. That gives the impression that the content you’re looking for is missing. It’s difficult to find the right content if an artist’s discography is split between many different artist pages. But the suggestion of good video content is a large plus. That makes me want to see the music videos instead of just hearing the song. But overall I get the impression that TIDAL doesn’t know me as well as Spotify does.
4.3 Smart Phone Sensors

To better be able to explore new interactions in music streaming, I decided to explore which sensors we have built in in our cellphones.

We do most of our music streaming through our cellphones, and the amount of sensors in our phones is impressive. These are some of the inputs I think could have a potential in music streaming, and how they are typically used today.

3D Touch
The 3D Touch measures the intensity and the direction of the finger pressing the screen. Is often used to reveal more options related to the action you are doing.

RFID/NFC
RFID or NFC (Near Field Communication) can be used to send information from one mobile unit to another just by holding them close to each other. Is typically used for mobile payment.

Compass
The compass helps the user decide the orientation of the sky. Is typically used for navigation to decide which direction the user is facing.

Voice Recognition
The cellphone’s microphone can recognize words and help you perform simple tasks by talking to your phone. Typically used for iPhone’s Siri. Can also be used for identifying music, like for the service Shazam.

Accelerometer
The accelerometer detects motion, and lets the user perform different tasks by simply moving the phone around. Used a lot in mobile games.
To understand how TIDAL is built and designed, I sketched out copies of some key features of the app in Sketch and InVision. This proved to be helpful in more than one way.

Replicating TIDAL helped me understand the different elements of TIDAL’s application. I learned how a playlist should look compared to an album, how the color and boldness of the typography is used to highlight the content, how the different music suggestions are sorted, and much more. Though this was done first and foremost for learning about the structure and design of the app, it also proved to be a valuable tool for my earliest prototypes.

Having this framework ready at an early point led me to easily test and prototype early concepts and ideas in a realistic manner, and helped me take a step away from the pixels to focus more on the interaction and exploration of the content in the following weeks.
4.5 Credits Metadata

To figure out what kind of metadata users get in TIDAL, I read through the data sheets for a handful of albums of different genres of music. These are some of the most interesting and useful data points found in the analysis:

**Data that leads to another artist:**
- Songwriting
- Guest Artist, Featured Artist, Additional Vocals
- Producer (engineer)
- Photography, Design (visual artist)

**Instruments by Artists**
Format: Name of instrument, then names of artists. Example:
Piano - McCoy Tyner

**Data that leads to an engineer:**
- Mixing
- Mastering
- Engineer
- Recorded by
- Producer

**Sample (leads to sampled song)**
Format: Contains a sample of "Song Title" by "Artist Name"

**Release date**
Format: YYYY-MM-DD

**Record label**
Format: Label Name

**Album Description**
Format: Pure text
4.6 Royalties

I wanted to look further into how music streaming businesses pay the owners of their musical product; the artists. Reading how independent artists struggle in today’s music climate, I was keen to investigate how TIDAL wanted to make this situation better.

In the music business, a “royalty” is a payment that the owner of a piece of music gets from anyone who borrows or uses the music. When the music business was more focused around selling physical copies of music, CDs, cassettes or vinyl records, these royalties were generally a lot higher for the artists. The price of one CD would then be higher than what we today pay monthly for access to all the worlds’ music.

The music streaming companies have been criticized for the low artist royalties. A lot has been blamed on a music business in crisis, where torrenting sites and illegal downloads left the major music labels in shambles in the 2000s. Now in 2018, the music business in general have turned from pessimism to profit, but still, the music streaming businesses every year lose more money than the year before.

One of the largest problems with streaming for artists today, is that the royalty rates are based on the total revenue of the streaming services. Spotify had a annual loss of 9% last year, which means that artists generally can expect a 9% smaller royalty paycheck than the year before.

The royalty model that Spotify uses, is called the Pro Rata model. It means that all the money that goes in to Spotify one month is divided on the total numbers of song plays that month (after operating expenses and things like that has been subtracted). Then, the artists with the most plays in total, gets the most money.

An alternative to this could be a model where each listener’s payment is split between the artists that he or she listened to that month. When entering TIDAL for the first time, that’s the model I assumed that they were using. I had read this on their web page (TIDAL, n.d.):

“TIDAL has the commitment of artist owners that believe in creating a more sustainable model for the music industry.”

When creating the streaming service analysis, I found that TIDAL uses the same model that Spotify uses, but TIDAL’s royalties percentage is three times larger (even six times larger for TIDAL HiFi users). Nine out of ten of the services I looked into use the same model as Spotify. On their web page, this is what TIDAL says about their royalty model:

“TIDAL believes in valuing music. We are committed to creating a sustainable model for the future of the music industry, which includes maintaining value for music, respecting creativity and encouraging the active participation of artists. A more sustainable and equitable
model for artists, producers and songwriters that includes paying more for streaming, can help incentivize support for streaming and create new ways to ensure music maintains its value.”

There has been written some reports on the royalty models of streaming companies. The research report "Pro Rata and User Centric Distribution Models" by the Finnish Music Publishers’ Association (2017) says:

"... it has become very important to study closer the current distribution methods of the subscription-based streaming services. According to our knowledge all major audio streaming services are currently using the pro rata model but various right holder groups have expressed needs to study also alternative methods such as the so-called User Centric model." The User Centric model is the model where each listener’s money is split on the artists that he or she listened to that month. In the University of Oslo research report "User-centric settlement for music streaming" (2014) I found this: "It is fair to suggest that this model brings back the direct link between fans and artists from the era of physical sales, which is broken in the current model. For a music fan it may seem more fair that the music one listens to results in direct revenue for the artists that are listened to - and not only to the music business as such.”

The report from the Oslo University compares the royalty payments of the Pro Rata model with what could have been paid with a User Centric model. The data they used was
collected from Wimp, the service that TIDAL is built upon. They found that the two models pay about the same to the most popular artists, but would generally increase the revenue of the independent artists with 13%:

”... they do not differ much viewed from a bird’s eye perspective. Both models give the same share of revenue to the same top 5000 artists collectively, and the top four labels would receive almost the same revenue with a user-centric model, as in the current pro rata model (75% compared to 76%). From a more refined and detailed perspective, however, the comparison shows an overall increase of 13% in revenue for local artists when we apply a user-centric model.”

This report was written in 2014, and a lot has changed since then. The Finnish report was however written in late 2017, and presents a more nuanced view, where some popular artists end up losing money:

“Popular artists, who would have got much less money in the user centric model, are most likely listened by a smaller number of subscribers who listen their tracks many times. Popular artists, who are listened by a large number of individual listeners and who listen them fewer times, are less affected by the changes between the two models.”

This report also concludes that a User Centric royalty model would be a more transparent option:

“In any case, the user centric model gives more direct power to users to target the money they pay for the service to the artists or tracks they favour compared with the pro rata model, which is not transparent from their point of view.”

Norwegian music distribution service IndiGoBoom (Kilevold, n.d.) writes that there are even more complicating factors to the equation of the pro rata model, like the amount of paying users in the area that the music is streamed in. Norway has one of the highest numbers of paying users, so therefore the royalties are actually higher in Norway than in many other countries. With a User Centric model, this equation would make more sense.

Another challenge with today’s model is that it doesn’t differentiate between 35 minute symphonies and 40 second “skits” between songs. By today’s standard, a track is a track, and they all get the same treatment and payment. TONO, the Norwegian Music Performing Rights Organization, has a better system for this. They base their royalty payments on the length of the musical piece in addition to the factors that the streaming services work with. A long composition therefore gets a higher cut than a short track.

The usage of music streaming increases dramatically every year, and that’s why it’s important to establish the right model for sharing the revenue as soon as possible. The music business is facing some fantastic years, so as IndiGoBoom says, the debate should no longer be regarding whether streaming services are good or bad, we should rather discuss how the money should be split in the best way.
There is one example of a music streaming service that has grown larger and larger through the last few years without compromising the payments to the artists providing their content. That’s Bandcamp, an independent webpage for streaming and selling music and merch. Forbes wrote this about Bandcamp (2015):

“Bandcamp has quietly been helping underground artists make a living for several years now, providing a platform for them to sell their albums and songs. The company’s mission is simple: help smaller bands make a living, and it looks like it’s working.”

In their summary of 2017, Bandcamp writes that while streaming companies continued to lose money (2018) “… we’ll soon mark six straight years as a profitable company that only makes money when artists make a lot more money.” The artists are always in focus for Bandcamp, which has helped them establish as a left-field, sustainable alternative to the major services, with a dedicated number of users with a love for alternative music and indie culture.

Bandcamp’s model is that listeners can stream an album for free a few times, but then typically have to buy the album to listen more. Bandcamp sells both physical and digital copies of the music, taking a share of 15% on digital items and 10% on physical goods. The remainder, usually 80-85%, goes directly to the artist, and Bandcamp pays out that money daily, whereas with TIDAL and Spotify and a digital distributor, you only get paid four times a year for your music. Ethan Diamond, co-founder of Bandcamp writes:

“We want a music platform to exist where the playing field is level, where artists are compensated fairly and transparently, and where fans can both stream and own their music collections. Since we only make money when artists make a lot more money, our interests remain aligned with those of the community we serve. It’s a straightforward approach, and one we’re happy to say works well.”

Though Bandcamp is a small business in comparison to, say, Spotify, their model seems to work very well. In 2017, their all-time payments to artists reached 270 million dollars.

“The streaming giants (...) must primarily serve their most important supplier, the major labels. The result is that independent labels, and especially independent artists, are far less likely to be discovered on those platforms. 99% of all streaming is of the top 10% most-streamed tracks.”

Being a service where anyone can upload their music without a distributor, Bandcamp takes an important role in promoting independent music, and is to many a trusted source of exciting new music.

Though there are more offerings in Bandcamp’s service than streaming alone, I have included Bandcamp in my streaming service analysis as the crown example of an artist centered and user centered music business actor.
4.8 Analysis Reflection

This chapter of analysis was a great tool for understanding the complexity of some of the challenges that my research pointed towards.

Analyzing the different streaming services helped me see that they are all very much alike. Some focus on high quality audio, other focus on easy sharing of content, but they are all more or less built upon the same framework. One thing that really separates the different services is the numbers of users.

Comparing the same search strings in two different search engines let me see how important this feature actually is, and how frustrating it is when your streaming service doesn’t understand what you are looking for. Analyzing the sensors of our smart phones helped me find potential for new interactions, and the same goes for reading up on metadata. Knowing the resources and material will help developing relevant concepts.

Investigating the royalty models of some of the streaming services led me to a deeper understanding of some of the financial issues I came across in the research chapter, and replicating TIDAL’s framework helped me understand the different elements of what TIDAL offers. It also gives me a platform for easy testing and realistic prototypes at an early stage. These prototypes and concepts will be presented on the following pages and chapters.
5. Concepts

An introduction to the ideas, concepts and prototypes
5.0 Concepts Introduction

To answer the insights and challenges I discovered in the research and analysis chapters I will now present 20 concepts within four categories.

The four categories of concepts are Entering TIDAL, Music Discovery, Sound and Listening Quality and Business Models. Each category contains a handful of ideas and prototypes, and in total 20 concepts will be presented.

Each concept is argumented for by a quote from the expert interviews or from the database of user interviews. Each of the concepts is also matched with one or several personas and situations of use, and is graded on how comprehensive or radical it would be for TIDAL to build and how large the effect would be for the listeners, or in some cases, the artists. The prototypes are leveled from lo-fi prototypes to hi-fi prototypes, and there are also some cases where the delivery is more a collection of arguments or explorations.

All screengrabs and screen images are new prototypes designed for this Diploma.
5.1 Concepts: Entering TIDAL

And why you should choose TIDAL in the first place
5.1.0 Introduction

Several of the concepts I developed fit into a category of introducing new users to TIDAL. My analysis showed that many of the streaming services have more or less the same offerings, so therefore it’s important to show what separates TIDAL from the rest.

These concepts include redesigning the playlist transferring, so that your musical identity is there the first time you use TIDAL. Another concept is about explaining the strength of TIDAL’s curated content, as well as explaining TIDAL’s audio quality in a visual way, and letting TIDAL users share music with non-TIDAL users as easily as possible.

Each of the concepts are matched with one or several personas and situations of use, and are graded on how comprehensive or radical it would be for TIDAL to build and how large the effect would be for the listener, or in some cases, the artists. All screen grabs and screen images are new prototypes designed for this Diploma.
5.1.1 Offboarding and Onboarding

How can TIDAL give relevant recommendations and respect the user’s musical identity from the first time he or she opens the app?

If you have a large collection of music in one streaming service, you’re probably hesitant of changing to another service. Many of the people I talked to argued for using Spotify by stating that Spotify was first or biggest on the market, so they just got used to that service. Now they have all their music on that platform, and don’t want to give that music up. I have looked into how changing streaming service could at least be as easy, or as tempting, as changing your phone supplier.

TIDAL has this thing called Playlist Import, which leads you to a third party service that is really difficult to use, and also costs money if you have more than one playlist (which, honestly, most of us do). Using the Playlist Import is a long journey of more than 10 steps of logging in here and there, and it’s almost difficult to the point where you want to give it up (Image 9).

Instead, TIDAL could use Spotify’s open API to collect the necessary data if you’re changing from Spotify to TIDAL. All TIDAL would need to do is the Spotify User ID of that person. Then, transferring your music collection could be as simple as authenticating Spotify data in TIDAL when starting your TIDAL subscription. What TIDAL could then retrieve from Spotify is all the user’s playlists, all the artists the user is following, the saved albums of the user and the saved tracks of the user. Collecting this information and having it ready when you open TIDAL for the first time, would lower the threshold for changing your streaming service.

All this information would be enough for TIDAL to recommend great content for new users from day one. It’s not only about transferring music collections and playlist, it’s about showing the importance of, respecting and reflecting the user’s musical identity.

```
Seeing your musical identity is crucial when entering a new streaming service - Birgitta Cappelen
```

**Concepts: Entering TIDAL**

**Personas:** Conscious, Audiophile

**Situations:** Setup, First Time Use

**Extensive/Effective(1-5):** 3/4

**Prototype Level:** Hi-Fi
Image 9: Flowcharts of old and new playlist imports

**Connect TIDAL to your Spotify account.**

**TIDAL**

TIDAL will be able to:

- Read your publicly available information
- Access your saved tracks and albums
- Manage your playlists
- Read your followed artists

Your are logged in as Ole-Birger Neergård. (Not you?)

**CANCEL**  **OKAY**
5.1.2 Curated Content

We love getting personal recommendations. If a friend or a family member, a blogger or a music journalist advises you to check out new music, it means more than if an automatic algorithm recommends it to you.

This is some of what makes TIDAL unique. However, it could be clearer to the end user that the recommendations are actually selected and written by a team of music journalists and experts, and not by an artificial intelligence. My test person had this to say about my first prototype:

“If the curated content is the important part, maybe TIDAL could show images of their music editorial team on the front page, like the one you would expect at the Pitchfork office or something.”

Personas: Radio, Conscious
Situations: Setup, First Time Use
Extensive/Effective(1-5): 1/3
Prototype Level: Hi-Fi
What’s most important for me is the quality of the recommendations. That, and having a large selection of music available. - Streaming user (25)
5.1.3 Explaining Audio

How can TIDAL explain the concept of audio quality without talking about bitrates and kilohertz?

Audio quality is important. But honestly, I don’t hear a lot of difference in the sound, especially not on small earpods.
- Streaming user (27)

My research shows that people want to listen to music in good audio quality, but do not necessarily know what to listen for, or what it is that makes TIDAL sound better than the competitors. To make the concepts of audio quality more understandable to everyone, it could be a good idea to compare it with video quality. The way we view video online has improved a lot the last few years, but the general sound quality in music streaming hasn’t improved as much.

Showing people how they would not accept bad video quality in 2018, but still accept low quality audio, could make people more interested and aware of the audio rates of different streaming services. Advertisements or campaigns like this could be shown on Instagram, on the trem or the metro, on the train to the airport or something similar, maybe along with an offer of three months free trial to hear the difference for yourself? The video in the campaign is distorted by using a technique called Datamoshing.

Personas: Radio, Conscious
Situations: Setup, First Time Use
Extensive/Effective(1-5): 2/3
Prototype Level: Hi-Fi
Remember when streaming video looked like this?

Don’t accept low-quality when streaming music.
5.1.4 Sharing Music

In TIDAL there is a large potential when it comes to sharing music with other users. Here is a couple ideas on what could be improved.

The first part of this concept is about sharing music from TIDAL to any other service. Being the only one with the odd streaming service can be difficult. As of today, in TIDAL’s sharing menu all of the sharing functions are outside of TIDAL’s app. This is a flexible solution, and lets TIDAL connect with many other apps for sharing, even services like Slack.

However, it feels like a less finished solution than Spotify’s sharing menu where everything is built in the actual app. If you want to share in any other platform than the suggested ones, you press “More”, and the sharing menu that TIDAL uses today would appear. Providing this updated sharing menu could even let you share a Smart URL that can be opened in any streaming service. LinkFire is a service that compiles all platforms that the music is available on, to create a URL that can be opened by users of all streaming services (Linkfire, n.d.).

It may be radical to suggest that it would be a wise move, since it would lower the threshold for users to choose other streaming services than the standard. With a tough competition and more and more competing services on the market, allowing users to share music with others no matter the platform would be the best solution for the actual users. It could also make TIDAL more visible. And who knows, maybe the next turn would then be that Spotify or Apple Music allowed to share music with TIDAL’s users?

Personas: Radio, Conscious
Situations: Party, Work, OMW
Extensive/Effective(1-5): 3/4
Prototype Level: Hi-Fi
I have also looked into how it could be possible to share music through NFC, after seeing the potential in this technology in the phone sensor analysis. Holding your phone close to another phone would then be enough to transfer your music. That would bring back the physicality of sharing a cassette mixtape or a homemade CD. The NFC sharing is a lo-fi prototype as of yet.
5.1.5 Reflection

In this chapter I have tried to answer some of the issues that come up when changing to TIDAL from a different streaming service.

I have seen a large potential in explaining the strength of TIDAL’s content, both in terms of audio quality and in curated music recommendations. The issues of sharing music with users of other platforms have been solved, as well as lowering the threshold for changing platform by having your musical identity reflected in the new streaming service.

About the curated content, my user test with a representative for the Conscious Listener, told me that when he was younger, he was reading all kinds of music magazines. If TIDAL is a platform where he could really dig deep into the music, read texts about the music, watch videos, read articles and more, he said he would spend hour upon hour in that service. That tells me that explaining and enhancing the strength of TIDAL’s curated content is very important.

When talking about and testing the transferring of playlists, the Conscious Listener said:

“I don’t think I need this. Or I’m not sure. I do have a lot of saved albums and artists. I think I’d transfer it manually, maybe. To clean up my library a little bit and only transfer the most important music.” Maybe some users would want a fresh start when opening a new service: “I’m not too concerned about TIDAL not knowing me when I enter the new service, because I’ll just search for the music I want to hear anyway,” my test person continued.

When it comes to sharing music, the Conscious Listener believed the universal links to be a good idea: “But as a Spotify user, I’m not sure I’d use it. Most of the time I’ll just send a Spotify link, because if someone doesn’t use Spotify, they’ll still see in their browser what music that link contains, you know? But anyway this is a step in the right direction, where you don’t need to know which streaming service your friend uses to share music with that person. It would also be cool to see that Snippet concept* included here. Checking out the essence of a track that’s shared with you without having to open the link would be great.”

* Read more about the Snippet concept in the Music Discovery chapter.
5.2 Concepts: Music Discovery

Exploring the world of music and exploring the world through music
5.2.0 Introduction

Music has the ability to take you to new places, new cultures and even let you travel in time, just by listening. This chapter explores new music discoveries in TIDAL.

The never-ending library of music is one of the best things about music streaming. Having access to a large part of all the music ever recorded in the pocket of your jeans was more than we could dream of just a few years ago. But with a music library of 50 million tracks, it’s also easy to get lost. Many listen to the same tracks over and over again.

In this chapter, I will introduce a range of concepts that could make music discovery easier and more interesting. I have investigated how to make people skip less tracks, how to improve the search engine, how to learn more about the contributors of the music, how to improve your music suggestions, how to lower the threshold for trying out new music, and how to travel to new places by listening and listening when travelling to new places.

As Brendon Rule explains in the book Dust and Grooves (2015): “My listening room has actually served as a window to the real world. I have learned so much about people, culture, politics and geography just from the records and their grooves. The world opens to me from there.”
5.2.1 Snipping, Not Skipping

What if you could hear the chorus of the track before pressing play, so you know it’s the song you are looking for?

One day when I was going to work, I was skipping through Katy Perry songs for 25 minutes looking for that one song that I couldn’t remember the title of. - Streaming user (28)

The first concept of music discovery is about hearing the essence of a song more easily. Using the phone’s 3D touch, or even just pressing and holding the screen, could play a 30 second snippet of the song’s chorus. The chorus typically starts after around 40 seconds in pop music, so that would be a good starting point.

This concept is made first and foremost for commercial music or pop music, where the catchy hook means more than in other genres. It will help users identify the songs they have heard at a party or on the radio easily, instead of skipping and fast-forwarding through the most popular tracks to find the one you’re looking for.

This concept also came out of the phone sensor analysis, where I found the 3D touch to be an interesting and relatively unknown feature in today’s phones. However, being that the 3D touch is quite unknown and little in use, a simple tap-and-hold gesture could do the same job in this case, and would be easier to discover. Some phones also don’t have the 3D touch, so then the tap-and-hold would have to be used anyway. Doing user tests to compare the two would show what’s the best gesture for this interaction and what’s the best outcome in terms of usability.

"The Skipping Rate" has become the symbol of how likely the listener is to skip a track, and is one of the most criticized features of the streaming services. This Snippet feature would remove some of the focus from skipping rates, and rather let the listener find out if this track is of interest before pressing play in the first place.

Personas: Radio
Situations: Work, Party, OMW
Extensive/Effective(1-5): 2/3
Prototype Level: Hi-Fi
5.2.2 New Ways of Searching

In this concept, I’ve been restructur- ing and opening for new features and interactions within the search engine.

It’s annoying that if I spell one single letter wrong, I can’t find the song I’m looking for.
- Streaming user (18)

I’ve been working on how you can search for music in TIDAL. A lot of the people I’ve talked to complain about the difficulty of finding the music you’re looking for. You can’t misspell, and there are many different versions of the same song and the same album.

I started by restructuring the search. A new structure could simply be based on popularity to avoid favorising cover bands. TIDAL could also include a Best Match result, that puts the most likely result before anything else. Some of these issues will be resolved with the new version of the TIDAL app. That tells me that I’ve understood the search engine issues the same way TIDAL’s designers did. My search comparison analysis was also taken into consideration before launching the new app.

I’ve also looked at how searching for lyrics could help you find the song you’re looking for based on the words you remember from that song. The lyric search could be built upon the open Genius API (Creppez-zi, 2015). This would come in handy f.i. when the song title does not match the words in the chorus.

Searching for a specific record label could also be of interest to a lot of users. Some record labels have a strong identity, where much of the music they release share the same vibe and sound. That could lead to discovering new music like the tracks you already know. All the albums and songs from that label could be presented on one page.

Including a Shazam-like function in the app would also be a good idea. Shazam is a service that “scans” your environment for music, and lets you know the title, artist and album of the song that is playing. Then you can search for the song that’s playing on the radio, in the club or whereever, and get the result in the app right away.

Personas: Conscious, Audiophile
Situations: Party, Work, HiFi
Extensive/Effective (1-5): 2/3
Prototype Level: Hi-Fi
Music Discovery

Results

Labels

Stones Throw Records

Tracks

Stones Throw Ringtone (Ringtones by Ringtone Records)

Results

Lyrics

ATLiens by OutKast

«Cause I'm cooler than a polar bear’s toenails ...»

Playlists

Sampling: OutKast’s ‘ATLiens'
JAZZ
Stones Throw Records

NEW TRACKS

<table>
<thead>
<tr>
<th>TITLE</th>
<th>ARTIST</th>
<th>ALBUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accordion Remix</td>
<td>Madvillain, Four Tet</td>
<td>Four Tet Remixes</td>
</tr>
<tr>
<td>Song Title</td>
<td>Stimulator Jones</td>
<td>Exotic Worlds and...</td>
</tr>
<tr>
<td>Mister Mellow</td>
<td>Washed Out</td>
<td>Mister Mellow</td>
</tr>
<tr>
<td>Laatititel</td>
<td>Vex Ruffin</td>
<td>Conveyor</td>
</tr>
<tr>
<td>Tittel</td>
<td>Vex Ruffin</td>
<td>The Balance</td>
</tr>
</tbody>
</table>

NEW ALBUMS
The next concept is about using metadata in new ways. In this context, metadata is all the data about the contributors of the music.

Many of the users I talked to that represented the Conscious and Audiophile personas were interested in knowing more about the music they played. I therefore started looking into the metadata of a few different albums. You get information about who produced the album, who made the album cover, which musicians are featured, which soul tracks are sampled on which hip hop song, and so on.

For a music producer like Just Blaze, this information is sorely needed. Though he’s one of the most productive producers in the world, his discography is very short on the streaming services. Introducing a “Producer On” tab for all the tracks where metadata says that Just Blaze is the producer, would solve that question and introduce more people to his music. The same thing could be done for every song that an artist is playing an instrument on, or that an artist wrote for somebody else. I would introduce tabs like “Plays on”, “Songwriter on”, “Sampled On” and more. Using metadata in ways like this could make new ways of music discovery possible, like finding the sample sources of your favorite music and make long forgotten songs relevant again. There are also other relevant metadata, like the date an album was released. That could be used for features like “Released on this day in history”, which is ideal for bringing up music that has an anniversary on that day.

The metadata also comes with descriptive text, which is now in most cases placed at the bottom of the credits list. I would restructure it and put the Description on top, because the background story of the music is often more enjoyable than lists of participants. TIDAL is also working on new ways of using metadata, so I hope these suggestions will be included in their solutions.

“Personas: Conscious, Audiophile
Situations: Work, OMW, HiFi
Extensive/Effective (1-5): 2/4
Prototype Level: Hi-Fi"
Concept: Music Discovery

This day in music

Every day we collect and present some important songs released on this day in history. Discover which albums was released one year ago, five years ago or even fourty years ago on this exact day.

Visit
The Isley Brothers

Tracks  Favorite  Share  Artist Radio

Similar Artists  Biography  Sampled On

It Was A Good Day  Ice Cube

I Know
5.2.4 Start Something New

This concept is about introducing new music to the users automatically when opening TIDAL to lower the threshold for new discoveries.

The most important thing is discovering new bands. But most of the time I just put on something I already know or even have in my record collection. - Streaming user (36)

Many of the users I talked to listen to the same music over and over again. To stop the user from solely listening to the same ten albums, TIDAL could automatically present new music to the user when opening the app.

Imagine you’re playing one song when closing the application. Then the next time you open it, there’s a recommendation based on what you heard last time. If pressing play or pressing the space bar is all you have to do to discover something new, it’s as simple as can be.

Repetition is important in music. Our brains love hearing a song that we already know. That recognition actually makes us happy on a cognitive level (Service, 2016). At the same time, having a large musical spectre is also important. It helps you not grow tired of the music, and a wide musical range lets you regulate your emotions with appropriate music no matter the situation.

Due to this dilemma between the importance of new discoveries and the pleasure of repetition, it would of course be possible to turn off the Automatical Discovery if it’s not right for you.

Personas: Radio, Conscious
Situations: Work, OMW, HiFi
Extensive/Effective(1-5): 2/4
Prototype Level: Hi-Fi
Discover something new!

Some of our users tend to play the same music over and over again. We want to try to introduce you to new music automatically when you open TIDAL.

Each recommendation is based on what you listened to last time. Press Play to discover something new today!

If you don’t want such recommendations, that’s ok. Recommendations can be turned off in the Settings.
5.2.5 Affecting Your Algorithms

If streaming is only one of the many ways you listen, how can your streaming service give updated, relevant recommendations? Some of the people I talked to play music on vinyl and CD as much as they use streaming. Some of them weren’t happy with the recommendations they got, since the streaming services don’t know all the music they listen to «offline».

My research show that many TIDAL users listen to CD, vinyl and even other streaming platforms in addition to TIDAL. That means that TIDAL misses out on a lot of listening data, that would have made the algorithms of music recommendation much more precise. What if you could register which artists, records or songs you have heard elsewhere to keep the algorithms updated?

One way to solve this would be the possibility of taking a picture of the album you just played, and then your streaming service could add it to your collection, much like the new app record-player.glitch.me does by combining Google’s image search data with Spotify’s music library (Sodomsky, 2018). Another possibility would be to register the albums that you’ve heard the manual way. During the user test with the Conscious Listener, he told me how he really liked this feature:

“I have a lot of albums that really define my musical taste, but that I still don’t listen to often enough for Spotify to know anything about it.”

We further discussed what would be the difference from saving an album to your collection and to adding it to your algorithms? In this case, maybe a “show me something similar” option would work better, as it makes more sense.

“I’d love to actually know more about the algorithms. What does Spotify really know about me? How can they be so spot on in their recommendations? It’s almost scary.”

“I don’t stream a lot. I’m just using Apple Music as a supplement to the albums that I buy physical copies of.
- Streaming user (34)

Some of the people I talked to play music on vinyl and CD as much as they use streaming. Some of them weren’t happy with the recommendations they got, since the streaming services don’t know all the music they listen to «offline».

Persona:
Conscious, Audiophile

Situation:
Work, OMW, HiFi

Extensive/Effective (1-5): 1/3

Prototype Level:
Hi-Fi

“Personas: Conscious, Audiophile
Situation: Work, OMW, HiFi
Extensive/Effective (1-5): 1/3
Prototype Level: Hi-Fi"
5.2.6 Geographical Content

Music can let us learn more about the world. How can this world of music be introduced to you, both at home and when travelling?

Using your location to provide recommendations would be an interesting feature. If you’re on holiday, you could get recommendations based on the location to learn about and discover music of other countries and cultures.

Relevant music or playlists will be recommended when you visit a specific place. TIDAL could see which part of the country you are in or where you’re on vacation, and recommend music that is geographically relevant. The recommendations could also be given based on what people have been listening to there earlier. After-ski playlists if you’re on the mountains or dance hits playlists if you’re in Ibiza.

These recommendations should only be shown the first few times you are at a new place, to differentiate between travelling for a week and having moved to a new place. It would also be cool to introduce new ways of categorizing playlists. TIDAL has a lot of these great geographically and historically themed playlists, so putting those playlists in another content, for instance a map, would make it possible to travel to a new country or time through music, even when you’re at home.

When we visited Liverpool recently, all we listened to was The Beatles and ’60s rock music.
- Streaming user (26)
Personas: Radio, Conscious
Situations: Holidays, Party, OMW
Extensive/Effective (1-5): 1/3
Prototype Level: Hi-Fi
5.2.7 Reflection

In this chapter I have explored and redesigned some of the features that help you discover new music.

I have investigated how to find the song you are looking for as easily as possible, how to learn more about the musicians while looking for music, and how to take an active role in the recommendations you get. I also saw that there is potential in exploring travels through music. I would also like to further explore how time travel through music could look.

When the concepts were presented and tested with the Conscious Listener, this was some of the feedback I got: “The snippets are smart, it’s a good idea. It’s better than skipping through a lot of songs before finding the one you’re looking for. I’m not sure if I would actually use it though, most of the time I know what music I’m looking for.”

The Metadata concepts are more interesting for a Conscious Listener: “I’m absolutely nerdy enough to want to use this. This is a great way to discover new music. Things like these were forgotten when we started using Spotify, and ‘Related artists’ was the only way of finding music related to what you were listening to. From songwriting credits to producer credits to sampling credits, it’s really interesting, and it builds upon that ideal service for me, where I would spend hours of the evenings discovering new music.”

When asked if the New Music on Startup concept is too forceful, he says: “I don’t think this is too intrusive at all. If I don’t like the recommendations I get, I can just turn it off. But based on how good the recommendations I get in Spotify are, I would probably be very happy with using a function like this. I would also like to get a pop-up when I’ve finished listening to an album, where I’d get some relevant tips of what to play next.”

The conscious listener is also very interested in the geographical content: “It’s a really small feature, but it still makes so much sense. I’d like to use this on vacations, in my Easter break, things like that. The geographical search feels like too much for me, but on the other hand I love the Snapchat map. Just tapping into a part of the world and seeing how life is like there at the moment is really cool. So if that would be somehow translated into music, I would like it, but I’m not sure this is the way. Like visiting music festivals or concerts from that map. I think that’s the future of ‘travelling in music’ for me”.

On a general note, my test person says this about music discovery: “For me, what’s important is to be recommended some older music. All the focus is around new music, as if two month old music isn’t interesting. I’d like to discover less new music and more timeless music. But I know that the other half of the listeners wants the opposite.”
5.3 Concepts: Sound & Listening Quality

A few steps on the way to making music streaming more enjoyable
5.3.0 Introduction

Many of the concepts fit into a category of increasing the quality of audio and the quality of listening for the user.

In this chapter of concepts I will explore how an equalizer could look in TIDAL’s interface, how the headphone listening could be enhanced by panorating the audio when you turn your head, how the High Fidelity content could be separated from the regular content, how listening to an album in full length could be more tempting, exploring how the full screen view could allow cross-media experiences, and how situation sensitive recommendations could make the listening more relevant for the user.

All of the concepts aim to enhance the listening quality for the TIDAL user and allow for new interactions and experiences while listening.
5.3.1 Equalizer

Based on the App Store and Google Play Store reviews, the TIDAL users really want an equalizer in their music player.

“ I want an equalizer in the app! PLEASE! ”
- App Store Review

An equalizer (or EQ) is a tool for adjusting the volume of the different frequencies of music. Typically it’s used for adjusting the bass (low freq.), the treble (high freq.) or the mid frequencies of the music you are listening to. An equalizer could be an important offering in terms of providing HiFi audio. Good sound is more than audio rates and numbers, and the speakers or headphones we listen through affect the way the music sounds. Therefore, a good equalizer can help the user achieve better audio if his Beats headset boosts the bass too much, if the treble is too loud in the earpods and things like that.

When you flip the phone from standing to sideways in play mode, the view looks like this. I looked at how an equalizer could be integrated in that horizontal view, but didn’t want to remove any of the current information. The equaliser is programmed with the p5 javascript library. When you flip the phone from standing to sideways in play mode, here’s what it looks like with my equaliser concept. First there is a visualisation of the frequencies in the music. That can tell you a lot if the bass is too loud for instance. When pressing the EQ button, you can then edit the bass, the treble and everything inbetween.

If you press and hold one slider, you can «filter» out that sound, which would be a entertaining feature to play with and to learn more about the audio information in the different frequencies. I also like the thought of shaking the phone to reset the equaliser, another idea that came out of the phone sensor analysis.

To build on this concept, it would be a good idea to create a number of presets to give the best possible audio in a set of different music genres, audio setups or listening situations.

Personas: Conscious, Audiophile
Situations: OMW, HiFi, Gym
Extensive/Effective(1-5): 2/4
Prototype Level: Hi-Fi, Java
Messages from the Tribe
Jawn Rice
5.3.2 Headphone Panoration

Panorating the audio in your headphones can give the sound a different feeling of direction and space.

When you sit and enjoy music on a set of speakers, the sound comes from one source in front of you. Replicating that direction of sound inside of your headphones gives a great spatial feeling. It sounds more as if the music was coming from a set of speakers and not your headphones. If you turn your left ear towards the replicated sound source, the sounds in your headphones gets louder on that ear and quieter on the other ear.

Having a good set of headphones is the easiest and most affordable way to listen to high quality audio. However, many prefer speakers because of the closed-in feeling of headphones. Panorating the sound by using sensors like the phone’s compass would give the impression of listening to a constantly placed source of audio, even though your headphones are on.

The problem with using a compass is that it’s quite fragile. It doesn’t take much motion before the compass starts rotating. Another issue is where to place the compass. The most logical thing would be to mount it on the headphones, that would be the only placement where rotating your head alone would create panoration. Panorating audio to navigate is used a lot in games and VR engines, so it’s a technology that is being more and more used. When listening on the computer, using the web camera to track the motion of your head and map the panoration could be another solution. Producing a small bluetooth direction sensor that you could stick to your headphones would be another option. The tests proved this idea to be valuable and innovative, but there are some challenges in terms of how to collect the data and which sensors to use. Overall, it would be an interesting new interaction to improve headphone listening for the audiophile TIDAL user.

They say that to get as good sound on a set of speakers as in your headphones, you have to multiply the price with 10… - Asbjørn Andersen, TIDAL

Concepts: Sound and Listening Quality

Personas: Audiophile
Situations: HiFi
Extensive/Effective(1-5): 3/2
Prototype Level: Lo-Fi
Concepts: Sound and Listening Quality
5.3.3 Separation of Content

Many choose TIDAL because of the great selection of high fidelity content. How can it be easier for them to find what they are looking for?

As of now, the only way to separate MASTERS or MQA albums from other content, is by looking for a small “M” symbol next to the album. These Ms are difficult to spot, and also quite confusing, since there is also the very similar and more known “E” symbol, that’s used for showing Explicit content.

I’ve therefore looked at how the Masters and MQA albums could be separated from the different content. The Masters content, or the MQA format, could be parted from the standard audio files in an artists profile, for example in a separate tab like this. It could also be separated in a different section but on the same part of the artist page.

Searching for MQA, HiFi or Masters could include only the MQA approved albums in the search results.

Personas: Audiophile
Situations: OMW, Work, HiFi
Extensive/Effective(1-5): 1/3
Prototype Level: Hi-Fi
I now use TIDAL only because of the MASTERS/MQA quality, and I hope that the MQA selection will be a lot better in the future. - Streaming user (50)
5.3.4 Saving the Album

The CAS listening club attracts many with the meditative listening of a full album. How could this full album listening be digitalized?

It’s easier to get interrupted from listening when you’re streaming. You’re always just a click away from jumping to something else that you’re associating with. - Kent Horne

In a 2016 Music Biz consumer report, 77% of the participants said that their primary form of listening was playlists or single song streaming. Compared to just 22% who chose the album. In total, streaming grew by almost 83% in 2016 while album sales declined by almost 16% (Seydel, 2017).

It has been speculated a lot on the downfall of the album format. The album can seem to be less relevant today than before, but is still to many the preferred way of releasing and listening to music. This concept is about exploring how users can be encouraged to hear an album in full, to do some meditative listening, and how to learn more about the music while enjoying it.

Personas: Conscious, Audiophile
Situations: OMW, Work, HiFi
Extensive/Effective(1-5): 1/3
Prototype Level: Hi-Fi

Concepts: Sound and Listening Quality
Concepts: Sound and Listening Quality

Classic Album Sundays:
Kåre & The Cavemen - Long Day's Flight...
5.3.5 Full Screen View

This concept evolves around exploring the full screen view of TIDAL and what information the users are interested in seeing.

The full screen mode is often used when the music is in the background, if it’s at a party, during dinner or for focused listening sessions. As of today, TIDAL has two different full screen modes. What if instead of this, TIDAL lets you watch a webcam from the place that the music is from? Or provides the song lyrics through the Genius API? The mode where TIDAL shows the album cover in full screen works fine. Providing high quality images of the album cover is something that many of the Conscious Listeners and Audiophile think is important. The other mode, where the album cover is cut to look like a rotating LP, is not doing any good. A rotating album cover has no root in reality, and looks odd.

Including song lyrics from the Genius API has already been discussed in the previous concept of Search Engine improvements. With lyrics to each song, the full screen could be a karaoke screen where you access the lyrics. Genius doesn’t provide "timed" lyrics, so it would be difficult to know exactly when to show which part of the lyrics. But a general rule could be to adjust the tempo of the text scrolling based on the length of the text and the length of the song.

There are many sources of web cameras in cities across the world. Seeing a camera that captures the city or country where the music was recorded could provide an extra layer of information and context to the music in many cases.

Automatically providing a music video in the cases where there is one available would also be a good function. TIDAL has a large library of music videos, so if you’re listening in full screen mode, the video for the actual song could be played automatically.

There’s a large potential in combining different media to create new interactions. Watching something while listening can enhance the musical experience. - Birgitta Cappelen

Concepts: Sound and Listening Quality

Personas: All
Situations: Party, Backgr., HiFi
Extensive/Effective(1-5): 2/3
Prototype Level: Hi-Fi
5.3.6 Situation Based Listening

TIDAL’s front page is very general. You get a lot of the same recommendations no matter your taste in music or the time of day. The music should either help me concentrate while studying, get me in the party mood, relax me when I’m stressed out, or just be interesting to listen to. - Streaming user (22)

TIDAL’s front page gives more or less the same recommendations no matter the time of day, if you’re exercising, reading or partying. Would a more personal or situation based front page make the recommendations better?

Because of the situations analysis and the user interviews, I know that music covers very different needs at different times and in different situations. My research showed that the music had to match situations like reading and concentrating at work, set the mood for a party, help you exercise, help you relax or just be interesting to listen to. All situations have different needs and different music suggestions. What if it was possible to define how you want to listen, or how you are listening, on that start page? Then the recommendations you would get could be more advanced and more fitting.

One user I interviewed told me how annoyed she was with her streaming service promoting the most commercial major label pop music, as if that was what she “should be listening to like everyone else”.

The App Store feedback also provided insights on how rock fans thought they got too many hip hop and RnB suggestions. It could be a good idea to rely more on what the algorithms tell about each user’s musical preferences, because our tastes in music are so personal, that the most sensitive users apparently will get pretty upset by seeing music that they strongly dislike.

Concepts: Sound and Listening Quality

Personas: Radio, Conscious
Situations: Gym, Party, Work
Extensive/Effective (1-5): 3/4
Prototype Level: Hi-Fi
MY COLLECTION
- Albums
- Tracks
- Videos
- Artists

MY SITUATIONS
- New situation
- Fest
- Trening
- Leseal
- Middag
- Vasking

Suggested New Tracks for "Leseal"
- Just A Stranger
- 20 Pakke
- Lost in Paris
- Vacation (feat. Joey Bada$$)
- All On Me
5.3.7 Reflection

In this chapter I have looked at several ways of making the music streaming more enjoyable, focused, high-resolutioned or more relevant to the situation and needs of the users.

Streaming music is more effective and more available than any other way of listening. It’s very easy, which, according to some of the users, can also make it kind of boring. In this chapter I have looked at some concepts that could make the listening sessions more interesting, more relevant and more focused.

Having the situations of listening in consideration would be a step in the right direction for TIDAL. Spotify are better at this, since they recognize which music you like in which situations, and have several musical profiles for each listener. But at the same time Spotify’s playlist suggestions can feel banal, where every Sunday you get the hangover playlist suggestion and every Friday there’s the weekend party lists.

Encouraging people to listen to an album in full length makes sense if you want to hear the music as it was created intentionally. But at the same time, music shouldn’t be a competition where you’re being judged for your way of listening. As one user said in the interview: “I don’t want to be rated based on what I listen to. I don’t even want to share it. My taste in music is private.” That also explains why some users take it personally if the music recommendations are a total mismatch.

The Conscious Listener had this to say about the equalizer: “Well, I’m thinking that you have to be very conscious about your listening before this would be interesting. I’ve never used one of these. But it’s probably a step in the right direction in becoming more high-end for TIDAL. This could be a good idea for home listening too, if the bass is too loud in your living room or something. But I think it would be practical to make it possible to use the EQ in vertical view as well.”

When asked about the full screen testing, the Conscious Listener had this to say: “Having the lyrics of the song is cool. I would love to have the karaoke function too, where the actual word being sung is a different color than the rest of the lyric. The webcam view is interesting, but what if you see something horrible? Like an accident or a terror attack or something? I also imagine that this is relevant for some music, but not all types.”
5.4 Concepts: Business Models

New subscriptions, new data points and new ways of sharing the money
5.4.0 Introduction

In this chapter I will suggest some new ways of doing subscriptions, a new way of sharing the royalty money and new ways of sorting and ranging the music.

My research shows that some of the things that people find challenging with the streaming services are about the way Spotify, Apple Music and TIDAL do their business in terms of the cost of streaming, the way numbers are presented, and the way artists do not get a fair compensation for their music.

My education and expertise is not at all in business management, but I will still try to address some of these issues from a designer’s point of view, with help from my analysis of today’s streaming services and the situations of use and by referring to interviews with experts and users.
5.4.1 New Data Points

Facebook has Likes, Medium has Claps, Instagram has Hearts. How could upvoting or music sorting look in a musical perspective?

Most streaming services as of today sort an artists’ top tracks by popularity. Before referring to an artists albums or singles, there’s a list of the most popular tracks on top of the profile. Spotify tells the users how many plays a popular song has, while most other services, including TIDAL, keep that information secret. Having the most popular songs on top makes those highlighted songs have even more plays.

Another data point is the previously mentioned “skipping rate”, that is a score of how many listeners that skip to the next song before the current song is finished. This information is not available to the users, but the streaming services use it for deciding which songs they should remove from their playlists.

Spotify also has a number of other strings to sort music by, like acousticness, danceability, energy, liveliness, tempo and valence. This information is provided by Echo Nest, a “music intelligence platform”, that’s essential to how Spotify works (Echo Nest, n.d.). I analyzed situations of listening, and the importance of having recommendations that match the situation of use. With information like energy, danceability and acousticness, this data could be used to match certain tracks to certain situations. The situation analysis showed that exercising and gaming needs music of high energy. Nights of partying needs music of high danceability. Days of studying could be matched with music of a high acousticness and a slow tempo. It could also be a combination of different factors, like songs with a high popularity and high danceability could be recommended for a party. After choosing one situation of listening, songs could then be sorted by how well they fit for that situation. This would facilitate for a more interesting and explorative way of sorting music.

The most popular songs on top of an artist page is not really fair to the artist or the listener. You don’t get the right impression of an artist based on those songs. - Streaming user (25)

Personas: Conscious
Situations: OMW, Work, HiFi
Extensive/Effective(1-5): 4/4
Prototype Level: Hi-Fi
Suggested Kanye West Tracks for «Fest»

- Celebration
- Touch The Sky
- Stronger
- We Major
- We Don’t Care
5.4.2 Royalties Models

With a current music climate where artists struggle to make a living, streaming services must take their responsibility.

In this concept I will discuss how a new royalties model would be the right direction for TIDAL. As an artist-owned company, the focus on paying artists more than the competitors is a main concern. The analysis of the royalties models show that there is potential in changing how artists get paid for their streams.

In the article Stream Of Consciousness on TIDAL's web page (n.d.), it says that "TIDAL has the commitment of artist owners that believe in creating a more sustainable model for the music industry". My research shows that today’s music industry is far from sustainable from an artist's point of view. Both the University of Oslo (2014) and the Finnish Music Publishers’ Association (2017) conclude that a more sustainable model would be the user centric model of paying artists.

In my research I found that by choosing TIDAL HiFi, you pay artists twice as much in royalties. As of today, this makes no sense, and here is why: if you pay a double price to better compensate the artists you like, almost all of your money goes to most popular artists, and not the artists you have listened to that month. Choosing to pay more to support your favorite artists would make sense with a User Centric model, but that argument is broken with today’s model. Since Norway has a higher number of paying customers and HiFi users, a User Centric model would also lead to a higher percentage of the money going back to the Norwegian music business, instead of sharing everything between all countries and all artists involved.

Parts of TIDAL’s mission is "... bringing fans and artists closer together". As of today, I’m not sure if TIDAL is accomplishing that mission. What is interesting is how closely that mission relates to what

Personas: Conscious, Audiophile
Situations: Setup, First Time Use
Extensive/Effective(1-5): 4/5*
Prototype Level: Argument
UiO writes about User Centric Streaming: "This model brings back the direct link between fans and artists from the era of physical sales".

TIDAL is the first artist owned streaming service, but I think part of the problem is that the artists that own TIDAL are super stars who are not connected to the everyday life of an independent artist. These artists could be worried about how changing from one model to another would affect their paychecks. However, the two reports show that “Popular artists, who are listened to by a large number of individual listeners and who listen to them fewer times, are less affected by the changes between the two models.” My hypothesis is that most of the TIDAL artists are within that category, and would not be affected much by changing. If anything, this change in artist payments could lead to new passionate users and an increased overall revenue.

TIDAL speaks about the importance of transparency in the sentence “We support full transparency to better educate consumers and stakeholders”. Once again, TIDAL’s goal is related to what is written about the User Centric model: “In any case, the user centric model gives more direct power to users to target the money they pay for the service to the artists or tracks they favour compared with the pro rata model, which is not transparent from their point of view.”

Many of TIDAL’s Norwegian users are there because of jazz, prog and classical music. Therefore, the song length should be considered in the royalty mathematics. These are all genres of music where songs generally are longer than the 3 minutes that are typical for pop music.

I also think TIDAL has underestimated the importance of physical music. Vinyl sales increase dramatically every year, but still TIDAL’s web site claims that “Music consumption is changing. It is shifting away from purchasing and owning music (via CD sales and downloads) to now accessing music via streaming without a desire to own physical copies of music.” Understanding the importance of physical sales is part of what made Bandcamp such a success.

TIDAL claims to be on team with the artists, but the users are not convinced. The services that have proved to be "artist friendly", like Bandcamp, get a dedicated user group. They get goodwill and engagement from the industry and the users, who rather download an album from Bandcamp than from iTunes. Things like that could make you stand out in the streaming war, and could be a natural next step for an artist owned company.

*The extense and effect score has generally been based on how this would effect the listener. But the important thing here is however the importance this would be of for the many independent artists.
Many of the users I talked to only use streaming a little bit, and therefore are not willing to pay a monthly fee for it.

This concept is about introducing a Pay-per-listen mode for those who don’t stream much music online.

If you pay 1 krone per song, you can listen to less than 100 songs a month, and save a few kroners from the original subscription of 99 kroners a month. If you don’t use TIDAL at all one month, it’s basically free. The maximum price a month could for instance be 149, so you don’t get a very high bill if you at one point let the streaming player run all day. To see how much you’ve spent and how many songs you listened to, this information could be visible on the settings page. The price per song is only a suggestion, and will need to be tested on a large number of users to see if it’s reasonable.

This would also address the issue where some users move from different streaming services all the time, but don’t want to lose access to their music. Discount offers and exclusive music will make it tempting to change platform once in a while, and current trends show that we will most likely see more of this in the future. Jimmy Iovine, producer and Apple Music executive, recently indicated that streaming services should move towards having more original content, like movie streaming services Netflix and HBO. Spotify is now launching its own label, TIDAL is big on exclusive music from its affiliated artists, and Apple Music has had large success with premiering albums by Drake and Frank Ocean.

With a Pay-Per-Song plan, you can use TIDAL to hear exclusive new albums or see the new videos, without having to decide whether you’re a bigger fan of Apple Music, Spotify or TIDAL, in terms of the service, the exclusive artists, the curated playlists and the non-musical content.

We need a solution where the price matches how much we use it. Then we would have access to the music for a fair price even if we don’t use it that often.
- Streaming user (30)

Persons: Radio, Conscious
Situations: Setup, First Time Use
Extensive/Effective (1-5): 3/4
Prototype Level: Hi-Fi
Pay-Per-Song is ideal if you listen to less than 100 songs a month.

1 NOK per song.
Never more than 149 NOK a month

TIDAL Premium
Pay-Per-Song.

START LISTENING

TIDAL FAQ
All you want to know about TIDAL, and more

Does HiFi work with mobile bandwidth?
HiFi streaming works really well on 4G/5G networks
5.4.4 Student Subscription

Introducing HiFi audio for students could come at half price, and be within the average streaming price of 100 kroners a month.

> As a student, 99 kroners a month is a good price.
- Streaming user (30)

Another new subscription I’d like to include, is the student subscriptions. 68% of the people I talked to would never pay more than 100 NOK a month. But TIDAL wants to introduce their HiFi option to youngsters, so then giving students 50% off the HiFi subscription could be the way to do it.

The Finnish report “Pro Rata and User Centric Distribution Models” (2017) states that “In case of subscription-based streaming services the most common monthly fee for an individual consumer is €9.99 per month. Services have also various kinds of offerings, special prices for students, family packages, and so on.”

Spotify set the rules of what a streaming service should cost, and that’s why a lot of the users are not willing to pay more than they are used to as of today.

According to TIDAL’s web page, there is supposed to be a student subscription that gives a 50% discount to all students, but it’s not available, at least not in Norway. If all students would get HiFi audio for 99 kroners a month, it would be within their budget, it could raise young people’s awareness when it comes to audio quality, and it would make them less hesitant to pay more for high quality sound the day they’re no longer students.

As my research shows, people do hear the difference between Spotify’s audio and TIDAL’s audio, and once you get used to hearing that difference, you’re less likely to downgrade your audio. Regular offers of HiFi trials to Premium users could also be a good way of introducing users to better sound.

Personas: Radio, Conscious
Situations: Setup, First Time Use
Extensive/Effective (1-5): 2/4
Prototype Level: Hi-Fi
Students get 50% off on all subscriptions

99 NOK
a month

Valid student ID is required

TIDAL HiFi
30 days free trial.

START FREE TRIAL

TIDAL FAQ
All you want to know about TIDAL, and more

Does HiFi work with mobile bandwidth?
HiFi streaming works great even with limited mobile bandwidth.
5.4.5 Reflection

In this chapter I have designed some suggestions on how the streaming services could work with new subscription models, new royalty models and new ways of sorting music.

Though I am not certified to talk much about the business models of music streaming, by using my design methods I have suggested some ways of answering the needs of the users and the artists in this chapter of concepts. Some of the suggestions, like changing the royalty model, are solely collections of arguments for doing things differently. The visual aspect is not relevant, the insights I have gained is what’s important to present. Other concepts, like the student subscription, are fully designed, and really easy to include in today’s service.

However, some of these concepts are more radical changes than the others. I know that switching the royalty model of streaming services have been suggested earlier, and that there are powers in the music business that would not necessarily want that change to happen. That a 75% cut of the revenue instead of the normal 76% cut could mean millions of dollars less to the major labels. I also know that going away from sorting music by popularity would go against how the major labels earn their money.

But on that note, TIDAL has aimed to be the streaming service that brings a sustainable service to the artists and the listeners, and these suggestions could be some of the ways of doing just that.
6. Conclusion

A reflection on what’s been done and reflections on what’s to come
Conclusion

6.1 Feedback

The concepts I have suggested have been received in different ways when presented for TIDAL. Some of the suggestions may seem a little provocative?

Some of the TIDAL designers and product managers have been very positive to the suggestions, but others have been skeptical. I can understand how some of these concepts are kind of provocative to TIDAL, as many of them are direct suggestions for things TIDAL could do better.

Some of the feedback has been related to how TIDAL is also working on a similar concept internally, or have tried something similar earlier. My understanding of that is that my feedback has helped me to dig into some of the key issues that TIDAL really needs to improve, and have yet to solve. For instance, some of the improvements I suggested for the search engine are already being resolved in the new version of the app.

Some of the feedback has been regarding how it’s difficult to argument for why TIDAL has to be the first business that lets users share universal links, or the first major streaming business to have the user centric royalty model. The argumentation can be difficult, but I believe that the argumentation provided in the concept suggestions speaks for itself.
6.2 User Tests

I had the opportunity to test the concepts on a representative for the Conscious Listener persona. His feedback was very valuable in evaluating the concepts.

The user I talked to was also part of the user interview, and was one of the many persons I based the Conscious Listener persona on. His honest feedback was key to understanding the value of the different design suggestions.

Many of the prototypes were exactly the kind of features that the user was looking for. The explorative use of music contributor metadata, the automatic discovery function, the possibility of affecting your algorithms and the geographical recommendations were some of his favorites. On the metadata concepts, he had this to say:

"This is a great way to discover new music. It’s really interesting, and it builds upon that ideal service for me, where I would spend hours in the evenings discovering new music."

Other concepts did not fit the Conscious Listener that well, though I admit that I thought it would. The equaliser is an example of that, where it probably matches the Audiophile better than the Conscious Listener.

"For me, having the most popular songs on top of an artist page is not really fair to the artist or the listener. You don’t get the right impression of an artist based on their top songs. I would love to turn off that whole “popular songs” function."

This feedback quote led me to explore the new data points concept, though it was done in the last few weeks of the Diploma, after the concept exploration should be concluded according to the plan.

Other concepts, like the snippets exploration, was not designed for the Conscious Listener, and therefore the feedback I received was according to that: "That’s smart, it’s a good idea. It’s better than skipping through a lot of songs before finding the one you’re looking for. I’m not sure if I would actually use it though."

If I had a few more weeks, I would do more of these user tests. In addition to the Conscious Listener, I would have a sit down with a few representatives for the Audiophile persona and a few of the Radio Listeners. That would make it easier to validate the different concepts for the different personas and know more about how they answer to the users’ needs.
6.3 Conclusion

This Diploma project has allowed me to be explorative, creative and critical, and has taught me a lot.

This project is an exploration of new interactions and possibilities that could make music streaming a better place for listeners, artists and business actors. The Diploma presents suggestions for both incremental and comprehensive changes to today's services, presented in a realistic way and based on actual needs and interesting reflections by people on all sides of the table.

Initially, I did a lot of research on HiFi audio, because that was the first direction TIDAL advised me to work with. I took a few steps away from that direction as I found larger challenges to be solved through my interviews. However, the importance of high quality audio still stayed with me throughout the Diploma, and is also reflected in this report.

Some of the risk in my Diploma is on how closely the designs are to today's solutions. However, that has been my intention all the way, to create something that can easily be seen as realistic features. Most of these concepts and designs are incremental changes created to be introduced in the streaming services of today, and not 20 years down the line. But there has still been a high degree of exploration, and my feedback from TIDAL shows that some of these concepts are quite radical after all.

Redesigning a whole streaming service and solving all the problems and challenges is too large of a task for 4 months of work. No-one has so far been able to solve all those issues, and the challenges of streaming occupy many and get written about weekly. So far the answers the streaming services have provided is that when the user numbers are high enough, things like royalty payments will solve itself. That has not yet happened.

The outcome of the Diploma is this report, showing the process, the insights and the deliveries of the Diploma. Other contributions are a presentation of user interviews collected in a database, a collection of user feedback as well as conversations with people from various aspects of the music business. The report also presents an analysis of the streaming services in today's market and what separates them and makes each one unique.

A wide range of concepts, ideas and designs based on the interviews and research is another key contribution, all of which is aimed towards creating new interactions and possibilities in the music streaming market, both for listeners, artists and music business actors. As well as introducing these new interactions, the Diploma also problematizes some of the challenges with the designs of today's services and music business, and presents suggestions to new solutions.
6.4 Reflection

Through this explorative Diploma project, I have accomplished many of my initial goals, while other goals need more work and more industry power.

My goals have been to explore and create some features that could build on and improve the music streaming services of today. The results are 20 suggested concepts that could bring new interactions and new opportunities to the listeners and the artists in music streaming. These features are all designed for the music streaming service of today, which makes the concepts realistic and feasible. The prototypes vary in fidelity levels and complexity, and some ideas are strictly argumental, while others are close to finished prototypes. I will present my work for TIDAL now, and hopefully the concepts will create some ripples and inspire them to integrate some of these ideas.

One goal with this Diploma has been to learn more about the music streaming business, and present my knowledge in an interesting way. Working so closely to TIDAL helped me understand the market in new ways, and talking to a high number of experts and users helped me understand how users maneuver in the jungle of streaming actors. The insights I gained helped me explore and sketch out a high number of interesting concepts, and I think the insight is also an interesting outcome in itself.

Another important goal was to talk to a lot of users to achieve a broad understanding of their needs and streaming routines. Talking to close to 50 music streaming users early in the Diploma period has in other words been a well accomplished goal, and a great resource for the rest of the project.

Another accomplishment has been to explore new ways of interacting with your streaming service. That has been an interesting task that led me to explore things like our many phone sensors and screen touch gestures. I have explored some interesting new ways of listening and interacting with music streaming, from small interactions like getting recommendations based on where you are, to filtering out audio frequencies by pressing the EQ fader, to panrating audio to create spatial, directional audio in your headphones.

Another goal has been to address the lack of sustainability when it comes to artist payments and royalty shares. I have therefore compared TIDAL’s own vision with what they do as of today, and how well their vision would be achieved by doing the suggested changes. The best outcome would of course be to manage to change this situation once
for all, but it seems like that would take more than four months, and some help from the music industry. I think that a good continuation of this Diploma project would be to publish some of the insights I gained, for artists, listeners and music industry actors to read.

Learning more as an interaction designer, and proving how I can use the things I have been taught throughout my education, has been the most important goals of them all. Structuring half a year of work on forehand, and still managing to stick to the plan throughout the process has been very valuable. I have learned much through my research, my analyses, my user tests and my collaboration with TIDAL. To summarize, this Diploma has taught me a lot as a designer, and it concludes my AHO education in a good way. The Diploma project has been challenging, but all the way an interesting and enjoyable semester, that has prepared me for new challenges as an interaction designer.
6.5 What’s Next?

If I had a few more months of this Diploma, here are some of the things I would continue with.

First off, I would start by doing more user tests. I would talk to people that fit into the Audiophile and the Radio Listener personas, to get their feedback on the concepts and iterations. Do the concepts match their needs and expectations?

I came upon one issue towards the end of the project, and that was that TIDAL was introducing a new update around the time this Diploma was concluded. That leads to the fact that some of the features I have designed could be outdated because they match the previous version of the app. However, the design team at TIDAL have assured me that the ideas, the explorations and the process is the most important part of my delivery, not the graphic design or the UX I’m designing for.

But if I had more time, I would therefore continue by redesigning the features that will look dated when the new update arrives, and also take the new user tests into consideration for that updated set of iterations. I would also talk to more people, I have a list of a handful of people in the music industry that I wish I had time to talk to.

Further, I would explore the actual possibility of having some of these features built and tested by TIDAL users. I would then see how the users interact and use the new features, and do changes where the tests show that it’s necessary. Then I could see if the Snippet concept works best with the tap-and-hold gesture or with the 3D touch, or see if a student subscription would lead to more young HiFi listeners in the long run.

Some of the other concepts are of an argumental nature, like the discussion about different royalty models, and why TIDAL should change to the user centric model. This research and argumentation could be presented to a number of music blogs or music magazines, as the information is of large importance to both listeners, artists and music business actors. That could lead to interest around my masters thesis, and when the users are conscious of what they want from their streaming services, the services and the music industry are more likely to do some of those changes.

I hope that this Diploma could lead to that exact thing, change, both in the ways streaming services present music, pay artists, teach us about the songs we love, and much more. I also hope that this masters thesis will lead me to work in the crossing between music and design the next years, as it has been a very interesting and motivational topic to work with these last months.
6.6 Acknowledgements

I would like to thank those that helped me make this project possible:

Thanks to Einar Sneve Martinussen, Jørn G.S. Knutsen and Birgitta Cappelen for guidance and supervision along the way.

Thanks to TIDAL, and especially Simen, Asbjørn, Aziz, Anniken, Robert and Anders for sharing your product, your insights and your offices with me the last few months.

Thanks to Stian Nicolaysen for getting me in touch with TIDAL.

Thanks to Lisana Preteni for help with user interviews and documentation.

Thanks to Erik Storheim for valuable feedback.

Thanks to Martin, Ragnhild, Julia and Amalie for the Monday Stand-up talks.

Thanks to Pauline for proofreading.

Thanks to Kent Horne, Christian Obermayer and all the users interviewed for sharing your thoughts on music streaming.

And, finally, thank you for reading!
6.7 References


Images


Headphones icon by Tim Boelaars. Retrieved May 10, 2018, from https://thenounproject.com/icon/12188. Used under a Creative Commons Attribution 3.0 (http://creativecommons.org/licenses/by/3.0/).

HiFi icon by Creaticca Creative Agency. Retrieved May 10, 2018, from https://thenounproject.com/icon/1201811. Used under a Creative Commons Attribution 3.0 (http://creativecommons.org/licenses/by/3.0/).

Radio icon by Theo K. Retrieved May 10, 2018, from https://thenounproject.com/icon/94523. Used under a Creative Commons Attribution 3.0 (http://creativecommons.org/licenses/by/3.0/).

All other images and illustrations by candidate.

Attachments:

Appendix, including:
- Full user interview database
- Full-length expert interviews
- Streaming service analysis
- Search engine comparison
- Prototype images and iterations
How can new digital interfaces engage, uncover and enhance new opportunities, interactions and new experiences within music streaming?

This Diploma presents suggestions for both incremental and more radical changes to today’s services, based on actual needs and interesting reflections by listeners, artists and business actors.