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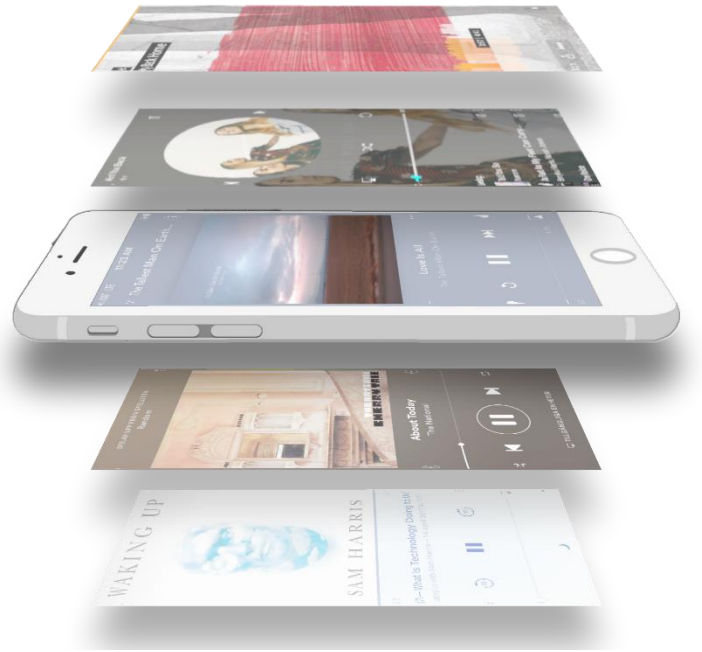

Experience Design for the Future of Audio Consumption

User Studies of the Audio Experience

Bachelor's Thesis in Design and Product Development

KALLE EKDAHL & SEBASTIAN HALLQVIST

Department of Product and Production Development
Division of Design and Human Factors
CHALMERS UNIVERSITY OF TECHNOLOGY
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Cover: *Illustration of Audio Platforms*.

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Abstract

The purpose of this bachelor's thesis project is to determine if there exists a need for a new digital audio application that aggregates several types of audio into one interface, and if so, identify its target user group and its key functionalities. The premise is that the audio landscape of today is fragmented, with multiple platforms competing across several audio disciplines, resulting in a potentially limited experience for the end user. The first phase of the project seeks to determine if there exists a need for such an application and, if so, identify the potential user group(s) with such a need. This is done through an online questionnaire, desk research and street interviews. The second phase involves in-depth interviews, focus groups and internal workshops with the goal of better understanding the potential user group(s) as well as identifying key functionalities for the application. Findings from the first phase show that there is a group of relatively young, multi-disciplinary audio consumers who are frustrated with the apps of today and who claim they would prefer having all audio accessible in one application. Second phase findings show how themes from in-depth interviews and focus groups, such as *aggregation*, *personalization* and *active and passive modes of listening*, are concretized in three examples of application functionalities. The results from the project form an informational basis for the potential development of this new application.

Key words: *audio consumption, user experience, music streaming, PURE Research & Design*

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Kalle Ekdahl & Sebastian Hallqvist
Gothenburg, Sweden, June 2017

1. Introduction

This section contains a background to the work presented in this project report. Furthermore, it contains the research aims, objectives, delimitations and thesis structure.

1.1 Background

This project examines the potential need for and subsequent target user group of a new type of audio application that aggregates various audio types into one interface. Furthermore, it identifies some key functionalities meant to form the basis for the development of such an application.

Music consumption is growing explosively and will likely continue to do so in the near future. This development is fueled by the phenomenon of streaming and the relatively new businesses providing that service. Consumption of other types of audio such as podcasts and online radio are also growing, again in large part on account of streaming.

Today, the audio streaming landscape is vast and fragmented. Key players such as Spotify, Apple Music, Soundcloud and Tidal are all competing for users, each with their own unique offerings providing a mix of music as well as other content - but there is no clear winner. Add to this the non-audio specific, yet relevant platforms such as YouTube and Vimeo as well as audio specific ones such as the Podcaster app and various online radio apps, and the potentially confusing diversity becomes apparent. Furthermore, the differences in each service's offering creates a problem of exclusivity and availability - certain content is often only available on one or a select number of platforms.

A potential consequence of this is that eclectic users may seldom be able to stay on one platform for an extended period of time. Instead, they could be forced to navigate between and through several platforms with different interfaces, requiring additional decision making and time, both of which are increasingly limited resources in today's fast-paced society.

One solution to this potential problem would be to aggregate several platforms into one interface. But is there a practical way of doing so? Furthermore, if this aggregation turns out to be feasible, what will existing companies such as Spotify and Apple have to say about such a development? What will users say? Do they crave a different solution or do they prefer the way things work today?

This project touches on a variety of topics such as:

- current audio consumption habits
- primary problems and concerns users experience with existing audio platforms
- the frequency with which users switch between platforms and the reason for doing so
- if there is a specific group of users whose habits are more suited for an aggregated audio platform
- key functionalities which should be built into a potential future audio application

The project is carried out in collaboration with PURE Research & Design, which henceforth will be referred to simply as PURE, a research and design consultancy firm based in Brooklyn, New York. The firm's main business is doing research assignments, often executed internationally, for large corporations such as Electrolux and Pearson Education. Sometimes the results from these research assignments generate new assignments in design and product development and other times the firm

takes on additional design work, often within the digital landscape. The company is small and employs five highly skilled professionals.

1.2 Research aims

The research in this project revolves around a potential future aggregated digital application described in the background section above.

As such, the aim of the research is to determine as thoroughly as possible whether or not there exists a need for said digital audio application and, if so, identify the potential user group(s) with such a need.

Furthermore, the aim is to better understand the potential user group(s) as well as to identify potential key functionalities for the application.

1.3 Research objectives

Below is a table of the project's objectives, which research methods are used and how the data is collected. The objectives help to achieve the research aim stated just above.

Objective	**Data sources**	**Methods**
1. Identify the target user group(s)	Questionnaire respondents (e.g. students), secondary articles and statistics	Internal workshop, online questionnaire, desk research, archetypes
2. Investigate the frequency of use of different platforms and what triggers users to switch platforms	Students, workers at Industry City (co-working space in Brooklyn)	Online questionnaire, street interviews, in-depth interviews, KJ-analysis, archetypes
3. Examine usability and functionalities of existing audio applications	Audio platforms, interviewees	Benchmarking/product testing, focus groups, KJ analysis
4. Ideate around potential key functionalities in a future audio aggregation application	Workers at Industrious (co-working space in Brooklyn)	Internal workshop, focus groups, KJ analysis, MoSCoW

Table 1. A table of objectives and corresponding methods and data sources. Authors' own rights.

1. Identify the target user group(s)
In the development and marketing of any product, digital applications being no exception, it is important to keep potential customers in mind. Otherwise, one runs the risk of creating an offering that is somewhat appealing to many but not appealing enough for anyone to actually make the

decision to purchase. Additionally, the research in this project revolves around questions regarding the development of a fairly specific new application. For these reasons, it is considered relevant to identify a target user group for the potential app and investigate the group in order to be able to draw conclusions about user habits, important functionalities as well as designing the methods used in subsequent stages of the research.

2. Investigate the frequency of use of different platforms and what triggers their users to switch platforms
By investigating how users interact with different audio platforms and the frequency of which they switch between these platforms, several conclusions can be drawn for the following questions. Do users care enough about having to use multiple platforms to make switching a legitimate problem? Do they encounter any specific problems in the process of switching? Have they created any makeshift solutions of their own?

3. Examine usability and functionalities of existing audio applications
Looking into user preferences in existing audio applications will generate a collection of insights. This will support decision making around future functions in an audio application and inspire the development process for a potential new app.

4. Ideate around potential key functionalities in a future audio aggregation application
In much the same way, investigating and benchmarking the functionalities in existing audio applications facilitates a deeper understanding for underlying problems. This will help spark ideas for new and improved or different functionalities.

1.4 Delimitations

- The thesis will present key functionalities for a future aggregating digital application. It will not include any product development.
- The primary focus of this research lies within the use of mobile devices, not desktops.
- The primary focus of this research lies within functionality and usability, not visual attractiveness.
- The research in the thesis will be focused exclusively on private use of digital audio applications, not commercial use.
- The bulk of the research will be conducted with American consumers.

1.5 Thesis structure

The thesis structure is as follows.

Section one introduces and sets the scene for the project, including research aims and objectives.

Section two provides context for the project by explaining underlying concepts and touching on various pieces of background and contextual information.

Section three lists and explains the methods used in chronological order.

Section four presents the results obtained by corresponding methods, also in chronological order. Additionally, it provides discussion around these results.

Section five consists of reflections on various aspects of the conducted work and the project itself, as well as some high-level discussions regarding how the research relates to the future of the audio industry.

2. Contextual background

This section explains underlying concepts that are important to understand in order to think critically and independently about the research and results in this study. It also provides insights on the state of the audio industry and the audio landscape from the perspective of users.

2.1 Streaming

Streaming is a way of consuming digital media content, such as audio or video, in real time ("BBC - WebWise - What is streaming?", 2012). Instead of having to store the specific file on your own device, it is typically stored on a server and can be accessed by multiple devices at the same time via connection to the internet. Being able to acquire the data and display it in real time requires a certain speed from your broadband connection. Until recently, fast enough broadband connections have not been available to consumers. This is the primary factor in the increasing trend of streaming that can be seen today.

The advantage of streaming is that it eliminates the need to store files on personal devices thus freeing up storage space for other use, or eliminating the need of large storage capabilities all together. It also lends itself to potentially viable and profitable business models, often based on subscriptions as exemplified by businesses such as Spotify and Netflix.

The disadvantage is primarily related to file quality. Despite faster broadband connections, it is often necessary to heavily compress files in order to facilitate enough data to be transferred per unit of time. Furthermore, streaming is obviously dependent upon a connection to the internet as well as that connection being reliable.

“If there is an interruption due to congestion on the internet, the audio will drop out or the screen will go blank. To minimize the problem, the device stores a ’buffer’ of data that has already been received. If there’s a drop-out, the buffer goes down for a while but the video is not interrupted. If there is no more data in the buffer, it will usually stop and display a message - ’buffering’ - while it catches up” ("BBC - WebWise - What is streaming?", 2012).

The phenomenon of streaming is relevant to this project since it is massively increasing the content available to each user. This relates to the first part of the project idea for the aggregating digital application – without it the prospect of aggregating many types of content into one application would not make as much sense.

Streaming in the music industry

Many indicators point to a continually growing presence and dominance of streaming services. Last year (2016), streaming revenue grew by no less than 68.5% from the year before, overtaking revenue from sales for the first time and accounting for over half the total revenue of the industry. For the last

five years, streaming revenue has been growing rapidly by every year (Rys & Levine, 2017), and revenue from streaming was also the main contributing factor to the total increase in industry revenue by 11.4%. Also, the average per-stream royalty rose, making each individual stream more profitable (Rys & Levine, 2017).

Currently, there are several different prominent players in the music streaming landscape. Examples include Spotify, Soundcloud, Pandora Radio, Deezer, Apple Music, Tidal and the video platform YouTube. In March 2017, leading streaming platform Spotify announced it now has over 50 million paying subscribers and over 100 million total subscribers. This increased from 30 million paying subscribers one year prior (Russell, 2017).

Based on the trends illustrated here, one might say that streaming is the future of the music industry. The developments in the music industry are relevant to the project since, although the idea for the audio application entails aggregating several different kinds of content into one application, its foundational content type is presumed to be music.

Audio streaming in general
Another even more recent phenomenon is podcasts and online radio. The consumption of podcasts in the U.S has increased steadily since 2013 (Pew Research Center, 2016). Online radio consumption is also rising, in unison with a notable migration from desktop listening to mobile (Pew Research Center, 2015).

The podcast landscape is even more fragmented than the music landscape, with podcasts being accessible anywhere from producers' own websites to apps such as Acast, Podcaster and Stitcher to video platform YouTube. Online radio is typically available from producer websites as well as their respective apps. Additionally, some of the big players in music streaming are now implementing podcasts and various types of online radio in their apps. For example, YouTube is also a popular platform for consumption of other types of audio. This can be a talk or lecture, such as a TED talk or something more personal and specific like a video explaining a new policy at the company where you work, where you only need to hear the audio and not the visual content. It could also be a funny skit, an instructional or motivational video, or basically anything where the listener can benefit from only consuming the audio part of the content.

Podcasts and the other audio formats described above are all available through streaming. The state of the audio landscape (other than music) speaks to the project idea for the digital application, as it illustrates why it would make sense to aggregate.

2.2 Navigating the audio landscape

To demonstrate the vast and fragmented nature of the current audio streaming landscape, some relevant audio platforms will be briefly described and compared below.

Spotify
Spotify is in many ways the leading streaming service for music. It has a large library available, more or less exclusively consisting of professionally produced songs and professional remixes of those songs. It also offers the option of importing native files (files stored on your device) to your Spotify account. One of the many playlists they carry is the popular *Discover Weekly* playlist where personalized song recommendations are presented (www.spotify.com).

Tidal
Tidal offers similar functionality to Spotify. The platform's claim to fame lies in providing truly lossless audio combined with an emphasized focus on artists and the culture of music. This manifests in exclusive content, high-definition music videos and higher subscription fees resulting in more money to artists (www.tidal.com).

Soundcloud
This open platform makes it possible for anyone to upload audio files themselves or connect directly with other artists and creators. It is amateur focused, although some prominent artists and creators use the service (www.soundcloud.com).

Pandora Radio
Pandora is "free personalized radio that plays music you'll love". It diverges from traditional radio by utilizing the internet to transmit audio as opposed to radio waves. The main difference compared to aforementioned audio platforms is that Pandora operates on traditional-radio style "stations". It is not possible to pick a song and listen to it on its own - it is only possible to build a radio station around that specific song and listen to that (www.pandora.com).

YouTube
YouTube is the most cross-disciplinary and diverse of all platforms listed in this section. It is also the largest by far with around one billion users - close to one-third of all people with an internet connection. The platform is based on video content and geared towards desktop use, but almost all content imaginable can be found, including several audio types such as podcasts, live shows, news lectures, interviews etc. It combines functionalities from all of the other audio platforms mentioned here, e.g. providing amateurs as well professionals with the possibility to upload content (www.youtube.com).

Podcaster
Podcaster is one of the most widely used apps for accessing and listening to podcasts. It is the app that comes as a standard on iOS devices. Podcaster is really a podcast directory as opposed to a podcast host, effectively listing a broad selection of podcasts and giving users direct access regardless of where the podcasts are hosted. This alone speaks to the fact that there are many, many different online sources from which a podcast can be downloaded or streamed (www.itunes.apple.com/se/app/podcaster/id525463029?mt=8).

The Podcaster app is far from the only podcast-focused app. Other examples are Stitcher and Acast.

The audio landscape as a whole
The platforms listed here demonstrate the fragmented nature of the audio landscape discussed in section 1.1. One must not forget that the platforms listed here are merely a small selection of what is available to the average user.

Furthermore, the abovementioned platforms Spotify, Tidal, Soundcloud, Pandora and their competitors all have differences in visual identity and functionality, as well as in their offerings of music content. Sometimes the content overlaps, but often the content is exclusive to one or a select few of the platforms. This means that users with even a remotely eclectic taste in music are often forced to navigate through several different platforms to accommodate both their short and long-lasting preferences in music.

Putting aside the differences in individual content offerings, these platforms are all individually recognized as being in the business of streaming *music*. But the reality is that most of them are now implementing other audio types in their services, such as podcasts, various types of online radio and even related video content such as music videos. As previously mentioned, podcasts and online radio can also be found on producers' own websites and in a variety of apps dedicated to those audio types. On top of all this, there is YouTube - an all-encompassing super platform that despite having video as its baseline, also offers virtually every other type of media content there is. And with its massive user base, it becomes a big player in all these areas.

In conclusion - when a user wants to hear a specific song, podcast, radio station or piece of other audio content - there are sometimes many platforms and channels to which they can turn, and sometimes there is just one specific place where the content can be found. If that user then wants to continue to listen to more content, especially if it is a mix of different audio types, the chances of being able to stay on one and the same platform to do so are slim. From the discussion in this section on navigating the audio landscape comes the motivation for the project idea of investigating the potential of an aggregating digital application.

2.3 User experience design

The research in this project fundamentally rests upon the concept of user experience design and its effectiveness in the context of new product development.

What is user experience?
The user experience is constituted of three main characteristics (Tullis & Albert, 2013):

- There is a user involved
- The user interacts with a product, service or in general performs a behavior inside a system involving an interface of any kind
- The interaction or behavior can be observed and/or measured.

In this project, the relevant interaction is between a listener and the interface of an application within a digital device such as a smartphone or computer.

What is user experience design?
Designing with the user experience in mind is called user experience design (Hassenzahl, 2017). With this approach, designers can obtain an understanding for underlying problems and the true needs of users in the context of a given interaction, allowing them to identify where the true value exists and consequently prioritize relevant functionality and form. When this approach is not utilized, designers might unknowingly be shaping the functionality within a solution system which might not be relevant to start with.

"Experience design starts from the *Why*, tries to clarify the needs and emotions involved in an activity, the meaning, the experience. Only then, it determines functionality that is able to provide the experience (the *What*) and an appropriate way of putting the functionality to action (the *How*)" (Hassenzahl, 2017).

Why is user experience design relevant?

According to previous research, materialistic purchases are most often inferior to experiential ones in terms of the perceived value generated for the user (Van Boven & Gilovich, 2003). To many, this will not come as a surprise. However, what is not so obvious is that, although the nature of the two types of purchases and the perceived value they each generate can easily be distinguished, the two concepts of materialistic and experiential cannot be separated. An argument can be made that things are not the opposite of experiences - they are an integral part of them (Hassenzahl, 2017). Extending this argument further, one might say that despite making a purchase that is technically materialistic, the consumer is not actually buying the thing itself so much as the experience that it provides. From this argument, a conclusion can be made that it is much more important to focus on optimizing the experience generated by a product, regardless of whether that product is more materialistic or experiential in its nature.

Furthermore, in the industrialized world, products are most often created by companies or individuals for commercial purposes. There is evidence that good user experience design makes good business and there are many examples of immensely successful companies attributing their success to the prioritization of user experience design, especially in the early stages of the companies' lives (Kucheriavy, 2015).

3. Methods

In this chapter, research and analysis methods used throughout the project are chronologically presented.

3.1 Desk research

Desk research is often the initial part of a research project, where the researcher investigates what others have done on the subject beforehand. According to dobney.com, a research consulting agency, desk research is similar to library research in the sense that research sources often are based on other sources of information, which should be found within ("Internet research", n.d.).

In this project, desk research is carried out for objective one - to compare the assumptions made for the target user group with facts on target users for existing platforms in order to evaluate the plausibility of the assumed target group. It is also widely used in the contextual background section (section 2).

Most desk research for objective one is delimited to Spotify and their chosen target group. The reason for this delimitation is that Spotify has the most paying users of any music streaming company in the world. Spotify's target group is discussed in an internal workshop (see section 3.2) and works as a basis for the developed archetypes (see section 3.3).

3.2 Internal workshop

This method is used throughout the project. Since it is not a typical or widely recognized research method in the sense it is used in this project, it is relevant to provide a definition within the project context.

In this project, the internal workshop method is used to materialize and categorize abstract ideas or reach conclusions and make decisions based on a set of data. The sub-methods utilized within the project's internal workshops include *either* individual brainwriting, group discussions and KJ-analysis *or* starts with a set of data followed by group discussions and KJ-analysis.

This method is used for the first and fourth objectives.

3.3 Archetypes

Building archetypes are not to be confused with another popular method of defining the user - the persona method. Archetypes are based on the user's behavioral patterns and mindset, whereas a persona should be built with personal attributes such as gender, age and hobbies (Farino, 2013). The difference between the two is crucial, since a person's characteristics and attributes do not always align with their behavior. Farino argues that analyzing behavior instead of attributes makes more sense when designing a user experience, and so building archetypes instead of the more common persona is the better choice (Farino, 2013).

The traditional archetype can be found in ancient literature, and portrays different types of characters, of which the hero, the magician and the outlaw are three common ones. These characters represent various values and interests and are supposed to reflect different user segments. Companies and big

brands often times use this method to steer their product or service towards what their choice of archetype represents (Elmansy, 2015).

In this project, archetypes are used in a non-traditional way. Rather than using them for steering a brand in a certain direction, three archetypes are created for the sole purpose of fine tuning the target user group. In order to do this, archetypes are used in a number of ways, including priming interviewees before interviews (see section 3.4 and 3.5), and assessing the relationship between each archetype and the interviewees' typical answers. These archetypes are then tested and iterated throughout the project.

Furthermore, it is important to note that the archetypes are not descriptive of any personality in its entirety – they are merely a way of describing some important traits within a personality. This means that a person can identify oneself with more than one archetype – it is a matter of which archetype(s) that the person identifies with the most.

This method is used for the first objective.

3.4 Online questionnaire

Conducting an online questionnaire is one of the most widely used research methods (Mae Sincero, 2012). It is a much faster way of collecting quantitative data than many other methods available, including personal interviews and telephone questionnaires. In addition, many websites offering online questionnaire services have automated ways of analyzing the data, leaving the researcher with less hassle trying to navigate through collected answers (Mae Sincero, 2012).

There are however some disadvantages that must be taken into consideration. While the absence of the interviewer can be an advantage in the case of trying to reach as many people as possible, it is often a downside if qualitative data is desired. This is why qualitative results from an online questionnaire need to be taken with a grain of salt (Mae Sincero, 2012). When conducting an online questionnaire, the risk of questionnaire fraud is also something that needs to be acknowledged, especially when targeting a large number of people. This is probably the biggest disadvantage, Mae Sincero (2012) writes: "*There are people who answer online questionnaires for the sake of getting the incentive (usually in the form of money) after they have completed the questionnaire, not with a desire to contribute to the advancement of the study".* However, these concerns are not especially relevant in this particular project, since the questionnaire takers do not receive any incentive.

In this project, the online questionnaire is designed using the online tool *Typeform* (www.typeform.com). The purpose of the online study is primarily to obtain quantitative data, as well as some qualitative data, focusing on research objectives one and two, presented in section 1.3. The two main goals of the questionnaire are to further determine and hone in on the target user group as described in section 4.1, 4.2 and 4.3, as well as identifying themes related to the use of and switching between different platforms.

One of the dominant contributing factors in designing the specific questions in the questionnaire is ideas found in the book *The Mom Test*, by Rob Fitzpatrick (2014). The main consequence of this is that the bulk of the questions are "anchored", as described in the book, in a much clearer way than they would otherwise have been. This technique helps reduce the effects of cognitive biases and the unreliability of the human memory in answers to the questionnaire questions. Fitzpatrick (2014)

believes that it is better to ask a question like “how many times did you do it yesterday?” instead of the more open-ended question “how many times do you usually do it?”.

The questionnaire is made accessible in various outlets. These include personal Facebook accounts as well as various Facebook groups, personal accounts on social media platforms Twitter and Instagram, through the internet forum Reddit and finally through personal social networks. The aim is to reach a diverse group of respondents, in different countries and of different ages.

This method is used for the first and second objectives. The questions can be found in Appendix I.

3.5 Street interviews

This method is said to be one of the most time-effective ways of gathering qualitative insights from consumers or users in a wide demographic scale (Vision One, 2016). It can also be used for public opinion polling. The nature of street interviews is short and to the point, as not to take up too much time. Usually, the interview takes about five minutes and has a number of open-ended questions. Street interviews are often carried out in public areas where a large number of people are moving about; parks, shopping malls, busy sidewalks or outside different kinds of venues.

Advantages with this type of field work include that the interviewer can target a group of people with special interests, e.g. stand outside a shoe store to find those interested in sneakers, or a computational software convention to find programmers (Vision One, 2016). It is also possible to target people with a wider range of interests and attributes by choosing a popular park as the location.

On the other hand, at least in comparison to conducting an online questionnaire where similar results can be achieved, street interviewing takes more time and requires more preparation to reach good results (Vision One, 2016). One reason for this is that the conductor has to be present when the street interview questions are answered, whereas online questions are answered without any supervision from the conductor.

In this project, street interviews are designed after the initial analysis of the online questionnaire results. Many of the questions used in the online questionnaire are reused in the face-to-face street interviews, but in an adjusted form. In this sense, this method is used as an extension of the online research in order to home in even deeper on the target user group as well as gaining a deeper understanding of their behaviors. An additional goal is to take advantage of the face-to-face nature of the method and test the questions themselves for future research purposes. The street interview questions can be found in Appendix II. This transcript is the final draft of a working document, where questions had been iterated and fine-tuned all through the week of the street interviews.

The interviews are primarily carried out in Washington Square Park, Manhattan, a place chosen for its proximity to the main buildings of New York University. University students are presumed to be a good target, both because of their approachability and the potential of fitting the target user group, see section 4.2. The timeframe for each interview depends on how close to the defined target group the interviewee is judged to be, and ranges from two minutes to up to ten minutes per interview. To establish the person’s proximity to the target group, screening questions are asked in the beginning of each conversation. These questions include if the subject uses streaming services for audio and which types of audio the subject listens to.

Furthermore, every conversation starts out with the interviewee being asked which of the six archetypes he or she identifies with most. This makes it simpler to get an idea of which way to steer the conversation and is also important for gathering specific insights on audio consumption for the defined archetypes. See section 4.3 for information about the six archetypes.

Street interviews are carried out primarily for the second objective.

3.6 In-depth interviews

In-depth interviewing is another method of gathering qualitative data where the interviewee provides his or her perspective on a given subject. This method is often times conducted in a small scale and focuses, as opposed to street interviews, on collecting richer data (Boyce & Neale, 2006). In-depth interviews often complement other types of research methods and offer deeper insights and underlying causes on what is said in for example street interviews or in a questionnaire. There is one particular aspect of conducting these interviews that needs to be considered for the method to be successful. It is important to ask the right type of questions, meaning the interviewer needs to be clear and precise and put his or her own thoughts on the subject aside. This is to avoid bias. This is naturally true for all the methods, but especially important here because of the conversational nature of an in-depth interview, where it is easy for the interviewer to let his or her own thoughts influence the conversation.

Advantages include the depth of the collected data, and the possibility to interact with the subject in a more relaxed environment (Boyce & Neale, 2006). The interviewer has the opportunity to ask follow-up questions when something relevant comes up which generates more and richer information. This makes the process of extracting meaning from individual answers less of a guessing game. It is also a good way of refining the subject of matter, as the interviewees might include perspectives that are formerly unknown to the interviewer.

However, in-depth interviewing is relatively time consuming, both when it comes to conducting them and analyzing the results. Another potential pitfall is the fact that the answers from in-depth interviewing, like in any other face-to-face type of field work, can be biased, especially if the interviewee has any kind of stake or personal investment in the project (Boyce & Neale, 2006).

Another weakness that needs to be taken into consideration is the fact that the validity of results is highly dependent on sample size and selection. Participants must be screened and verified target users in order to draw any conclusions that relate to assumptions regarding the defined target user group.

In this project, in-depth interviews are designed after the initial analyses of the qualitative data from the online questionnaire and street interviews. The categorization of quotes and comments from these methods (online questionnaire and street interviews) are cross-referenced with the six archetypes, partly to validate the hypothetical attributes built into the archetypes, but also to further develop them. More than to further develop the target user group attributes, one goal of in-depth interviewing is to probe for and identify additional problems and functionality ideas for the future aggregating digital application.

As a consequence of the results from the previously conducted research methods (online questionnaire and street interviews) (see section 4.4 and 4.5), two groups of people are targeted in recruiting for the in-depth interviews – organizers between 20 and 40 years of age and influencers

between 20 and 30 years of age. Both these groups are to be found at Industry City, a co-working space in Brooklyn, where three interviewees are recruited. Four interviewees are recruited from the online questionnaire and one from the street interviews. A total of eight people are participating in the in-depth interviews, which are conducted at various locations in Brooklyn and Manhattan. Recording and video equipment is used for transcription and analysis purposes.

To achieve the best result possible, a combination of open-ended and closed-ended questions are included. According to Fitzpatrick (2014), closed-ended questions provide quantitative answers, which often are successfully used to get the interviewee to start thinking about a certain subject. With the subject anchored, when an open-ended question is asked, better results can be achieved.

In-depth interviews are used for the second objective. The interview guide can be found in Appendix III. This is the final version of several iterations.

3.7 Product testing

Product testing is where the tester tests several products within the realm of the relevant field. According to Thomas (2017), monadic product testing - where the products are tested one by one, and not in direct comparison with each other - typically gives the best results. Thomas (2017) argues that since this is how people use products in real life, it gives the most credible results.

In this project, monadic product testing is carried out by the authors on a number of the most popular audio platforms; Spotify, YouTube, Deezer, Tidal, Apple Music, Apple's Podcaster app, Soundcloud and Pandora. Different perspectives and approaches of user interface are analyzed in said applications: how cluttered it is, how the play function is designed, how the discovery function is designed and what color scheme it has. In addition, how these perspectives add to the holistic user experience of the platform.

Product testing is used for the fourth objective.

3.8 Focus groups

Focus groups are usually carried out in the form of a table discussion with six to twelve participants and one or two moderators who run and control the conversation. These moderators carry a lot of responsibility for the success of the session, since it is their job to steer the conversation towards subjects where valuable insights can be obtained by the researchers (Mae Sincero, n.d.).

An advantage with focus groups is the quality of data. Since the point of the research method is for the discussion to grow organically, it enhances the richness of the gathered data. Disadvantages include the risk that the focus group, due to its limited size, is not being representative of the entire target group, and therefore somewhat misleads in terms of gathered insights. (Mae Sincero, n.d.) According to Mae Sincero (n.d.), there are primarily two types of focus group discussions:

Single moderator (one-way or two-way)
The traditional, or *one-way*, focus group exists of six to twelve participants who sit and discuss the subject matter. The moderator runs and controls the conversation. Another way is to have two different focus groups, where one group discusses the subject matter and the other group observes and discusses the progression of the first group. This is called the *two-way* focus group.

Dual moderators
This type of discussion includes one focus group and two moderators, where one of the moderators has the ultimate responsibility to make sure all the questions are appropriately worded and the other controls the progression and flow of the conversation. The moderators can also take a more active part in the discussion, and purposely take sides in the argumentation.

In this project, two focus groups are conducted, both of the latter type with dual moderators occasionally taking a more active role in the discussions.

The participants in the first focus group include four potential users of the future aggregating digital audio application, meaning they fit the target user group (see section 4.2). These potential users were recruited via contacts from the previously conducted street interviews and online questionnaire and hence are already informed and invested in the project. Primarily, the first focus group session aims to give further insights on users' problems, concerns and firsthand experiences with audio platforms, and indirectly also to provide ideas and inspiration for the functionality of the future aggregating digital audio application. This focus group is used to investigate the third objective stated in section 1.3.

The second focus group includes ten participants who are professionals within the field of digital design or technology. These participants are recruited via a newsletter to workers at Industrious co-working space in Brooklyn. The purpose of this focus group is to gather feedback on ideas of which functionalities to include in the minimum viable product (Techopedia, 2017) of the future aggregating digital audio application. These ideas are presented with a number of rough sketches (see section 4.9). The second focus group is used to ideate around future user interface and functionality, i.e. the fourth objective.

3.9 KJ analysis

According to Hallowell, KJ analysis is a relevant method of organizing and structuring sets of data (Hallowell, n.d.). It is based on the categorization of qualitative data, e.g. user problems and concerns, into themes and relationships to be able to make sense of often abstract or vague user statements. In other words, KJ analysis is a way of going from context-based high-level issues to more concrete and detailed information.

In reality, the method works as follows; qualitative or quantitative results, in the form of quotes, comments or statistics from various research methods, are written down on post-its and attached to the wall or board. The post-its are then categorized under a few themes and collected together. This makes it easier to see relations between user statements and consequently to break down vague quotes into tangible solutions or advancements (Hallowell, n.d.).

"KJ is particularly useful in software because people have a tendency to state problems as abstract characteristics they do not like as opposed to making data-based statements about what they need. KJ is helpful in creating a flow-down of information leading to solid requirements at an appropriate level of context" (Hallowell, n.d.).

In this project, the KJ method of analyzing data is widely used by the authors, and is essential for advancing to subsequent research after conducting the online questionnaire, street interviews, in-depth

interviews and both focus groups. Additionally, to organize the functionality after conducting focus groups (see section 4.9).

3.10 MoSCoW

This method is used for ranking sets of requirements, and is often used in the domain of customers' needs and wants. The convenience in having full clarity of what to prioritize in a project is helpful for the entire team, from management and customers to designers and developers (Haughey, 2013).

The ranking system is based on four categories; *must haves, should haves, could haves* and *would like to have*. In a similar way as in KJ analysis, post-its may well be used.

In this project, the MoSCoW method is used by the authors for organizing and prioritizing various sets of potential functionalities and features, utilized during the later stages of the project.

4. Results

This chapter outlines results from the methods used to achieve the various objectives stated in section 1.3. Results from earlier stages are used for later stages of the research. The results are presented chronologically, and correlate to the chronological order of the methods.

4.1 Desk research

To evaluate the plausibility of the target group assumptions made in section 3.2, the desk research focused on the Spotify platform as that is the one with the most paying subscribers on the market today (Russell, 2017). It also proved to be the most popular and widely used by participants in the research methods used in this thesis.

Some interesting and relevant facts were uncovered, one of them being that millennials are responsible for 72% of Spotify's total streaming, meaning those between the ages of 15-35 years old (McIntyre, 2016). The initially assumed age of targeted users in this project was 20-30 years old. Relating to Spotify and its users, this was deemed appropriate since the idea of aggregation combined with an improved user experience within one aggregating digital audio application as described in section 1.1, is geared towards individuals with a need for organization and with a refined taste in music and other types of audio content.

This group of users spend two hours per day on average listening to music alone (McIntyre, 2016). Consumption of other types of audio is not included in this statistic. This gives credibility to the prospect that these users may be invested enough in the experience to be willing to exert the effort required to try a new product that better caters to the needs described in the paragraph above.

Furthermore, although 47% of Spotify's users are between 13-24 years old, the second largest concentration (40%) of its users are found in the slightly older segment 25-44 years old (statista.com, 2015). This points to the potential of commercial viability in the selected age group of 20-30 years old for the work in this project.

4.2 Internal workshop

The workshop was made up of two separate, individual brainstorming sessions. Each session focused on a different theme. What was generated in the individual sessions was then analyzed collectively via the KJ-method described in section 3.9.

The *first* workshop with the theme "problems and opportunities" identified current problems within the landscape of audio consumption along with ideas about opportunities for new functionalities and unmet needs.

Problems
One problem that surfaced during this session was that the availability of various audio files within one type of audio (e.g. music, podcasts) is now scattered between several different platforms, each with their specific interface and functionality. For example, YouTube does not offer offline playlists whereas Spotify and Tidal do. Furthermore, users who consume several types of audio face even more problems in choosing what to listen to and sorting between and organizing their preferred audio.

Another problem was the fact that music is easily forgotten. Even songs that were once someone's favorites can become increasingly difficult to remember as that person continually discovers new songs and evolves their taste in music.

Opportunities
Two closely related opportunities identified were the possibility to facilitate a smarter, more accurate (in regard to the user's own preferences in music) and intuitive discovery function for audio and, as a consequence, creating a deeper and more powerful listening experience.

The prospect of an application including this led to identifying the opportunity to collect exceptionally rich user data due to the combined use of several platforms in one application and one experience. Such data could be advantageous both for optimizing the user experience within the app itself, and for creating an exclusive and attractive b2b-offering, e.g. granting music producers access to insights about their specific music and audience.

Additionally, an unexpected opportunity discussed was to somehow synchronize user data between multiple devices in the vicinity of one another and use artificial intelligence to analyze that data and output a playlist based on everyone's preferences - not just those on the device through which the music is being played. This would potentially be of great use at a party or similar event.

The *second* workshop with the theme "personality traits and behavior" generated a hypothesis about the individual characteristics of the target user group for later research. The characteristics included: geography, age, mindset, usage and activities. This was the starting point for designing the archetypes and subsequently the basis for designing questions for online questionnaire and street interviews.

Geography
The geography of typical users was assumed to be urban environments. The motivation for this was the assumption that typical users are culturally active in multiple disciplines and that such activities can more easily be found with sufficient frequency in urban environments.

Age
The age of users was assumed to be 20-30 years. This was assumed partly on the basis of research on user groups for the popular streaming service Spotify (McIntyre, 2016), and partly on the assumption that young people tend to be more tech-savvy, which is relevant for a digital application.

Mindset
Since the research is for a new application, the target users were assumed to be open-minded and curious. They feel that audio and music in particular is a great way to connect with other people. They value quality over quantity.

Usage
The target user group was assumed to be "power users", meaning that: every day, every opportunity, they use audio as a tool to change or feed their current their state of mind. They listen to multiple different sources of audio (music, podcasts, TED talks, etc.) and use a variety of platforms.

Activities
Finally, as previously mentioned, the user group was assumed to be active and interested multiple disciplines of culture and art. Frequent activities include going to concerts, playing in bands, hanging out in hip cafés, attending exhibitions, illustrating, writing, blogging and film making.

4.3 Archetypes

The user characteristics, problems and opportunities outlined in section 4.2 were incorporated into three user categories with two archetypes per category. The reason for having two archetypes per category is simply to increase the chances for our interviewees to relate to at least one and not feel excluded by the characteristics by a single archetype. The user categories were *Organizers*, *Influencers* and *Fans*, which were defined after combining the personality traits and behavior previously listed in section 4.2.

The archetypes were mainly used as a tool for research objectives one and two defined in section 1.3. These three user categories were used in the online questionnaire and the street interviews. The answers gave insights on the relation between users and their behavioral patterns.

It is important to note that these archetypes were initially made based on insights gained in the internal workshops and from desk research and were continually iterated after analyzing the insights from the online questionnaire and the street interviews to better represent the target user group. For the illustrations used to communicate the archetypes, see Appendix V.

Furthermore, it is important to note that the archetypes *influencers and organizers,* are not descriptive of any personality in its entirety– they are merely a way of describing some important traits within a personality. This means that a person can identify oneself with more than one archetype – it is a matter of which archetype(s) that the person identifies with the most.

Organizers
Organizers live busy and ambitious lives. Consequently, they do not have much spare time. They seek to optimize and streamline as much as possible in order to make the most progress and fit as much as possible into their day. This is also true for their listening habits. They strive to organize the various audio types and platforms they consume and use and appreciate being able to access all of their types of audio in one place to the extent that that is possible. They like to be able to plan out their day and therefore prefer the option to be able to save something that catches their interest and come back and listen to it at a later point.

Influencers
Influencers are social creatures. They thrive on finding new material in their discipline(s) of choice and sharing it with the world. The most common discipline is music, but their urge to influence often spreads to other disciplines such as podcasts and other individual interests.

They strive to be the go-to friend in their social circle when it comes to discovering new material. They are also fiercely dedicated to their discipline of choice and take pride in contributing to its prosperity and community. It is natural for them to spend large amounts of time looking for the next big thing and making sure they stay ahead of the curve. This is reflected in their social life by taking

up a disproportionate part of their interactions and discourse as well as determining with whom they frequently spend time.

Fans
The fans have a huge interest in all things music. To connect and engage with their favorite artists is of great importance – if their favorite artist's half-cousin has an art exhibition next week, the fan would like to know about it.

The interests of the fans also reach outside of the music landscape. They engage, read, listen and watch everything they can get their hands on, and often have several tabs or windows with information, reviews and event dates open on their devices. They often dedicate several hours a day to music or other creative outputs like film or design.

4.4 Online questionnaire

The two main goals of the questionnaire were to: further determine and hone in on the target user group as described in section 4.2, as well as identify themes related to the use of and switching between different platforms. The questionnaire was conducted online with participants from various countries, mainly Sweden (47%) and the U.S (37%). From a total of 343 respondents, 63% were in the ages 20-30 years old, 61% identified themselves as female and 39% as male. The most relevant results are presented in the table on the next page, as percentages of the total number of answers. All statistics from the online questionnaire can be found in Appendix IV.

4.4.1 Quantitative results

Top 3 archetypes identified with	• Christina Carlton (organizer) **45%** • Cory Anderson (fan) **16%** • Matthew Griffin (influencer) **15%**
Percentage using audio streaming services	• Yes **95%** • No **5%**
Percentage paying for audio streaming services	• Yes **70%** • No **30%**
Top 3 audio formats consumed	• Music **95%** • Podcasts **47%** • Online videos **35%**
Top 3 situations for consuming music	• At home **45%** • On the commute **34%** • At the gym or equivalent **7%**
Top 3 situations for consuming podcasts	• On the commute **50%** • At home **36%** • At the gym or equivalent **7%**
Top 3 situations for consuming audio from online videos	• At home **85%** • On the commute **3%** • At the gym or equivalent **4%**
Percentage of 20-30 year olds who switch between platforms any number of times in a day	• Yes **66%** • No/don't remember **34%**
Percentage in each archetype category who switch between platforms in a day	• Organizers **57%** • Influencers **72%** • Fans **63%**
Percentage claiming they would prefer a single platform for all types of audio	• One platform **64%** • Separated **36%**
Percentage in each archetype category who use curated playlists	• Organizers **48%** • Influencers **36%** • Fans **34%**

Table 2. Statistical results from the online questionnaire. Authors' own rights.

4.4.2 Qualitative results

Some open-ended questions were included in the questionnaire to give insights into the rationale and thought patterns around using multiple platforms. From this method, four main themes around the use of multiple platforms were identified:

Different types of audio

Although many people use more than one platform just to consume music, one of the primary reasons for using and switching between several platforms is to consume different types of audio. The most common transition is from music to podcasts or the other way around.

When asked why they did it, the questionnaire takers who switched between platforms often replied in similar fashion, i.e. in order to switch to a different type of audio:

"Switching between audiobook and music"
- 20-30 yrs, male, Vermont, USA

"Wanting a podcast instead of music"
- 20-30 yrs, male, Gothenburg, Sweden

"Switching from music to podcast, Spotify to Stitcher"
- 20-30 yrs, female, Austin, USA

Availability

Perhaps the absolute primary reason to switch between platforms happens in consumption within the same audio type, most notably in the consumption of music where songs often times are exclusive to one or a finite number of platforms. This exclusivity exists for certain artists as well as certain types of music, most notably various remixes.

When questionnaire respondents who switch between platforms were asked why they did it, another common type of reply had to do with availability of content:

"Availability of content. Different stuff on different platforms"
- 20-30 yrs, male, Gothenburg, Sweden

"To listening to different kinds of music or audio only found on specific websites"
- 20-30 yrs, male, Singapore

"Types of music, original to remixes"
- 20-30 yrs, male, Stockholm, Sweden

Context

The third main theme is *context* and is certainly the broadest and most ambiguous theme as it includes mood, environment, location and other aspects of one's day. The ambiguity is not to be mistaken for lack of importance; according to Harris (2012) it is plausible that these factors affect audio consumers more than they themselves realize.

Some answers regarding the reason for switching between platforms that reflect this theme are:

"It really depends on the weather and what mood I'm in"
- 20-30 yrs, female, Los Angeles, USA

"Going between work/gym/etc."
- 20-30 yrs, male, Umeå, Sweden

"When I have a change of mood"
- 20-30 yrs, female, Århus, Denmark

Organization

The final identified theme surfaced around the follow-up question "*why?*" to questionnaire respondents who claimed they would *not* prefer a single platform for all audio. The answers were more or less unanimous, all proclaiming the importance of keeping things organized and avoiding clutteredness, and at the same time assuming that this would not be achievable within one application.

Comments ranged from:

"I guess it's because it gives an illusion of order in my life"
- 30-40 yrs, female, Gothenburg, Sweden

"It's easier to have an overview"
- 20-30 yrs, male, Gothenburg, Sweden

to:

"One app for podcasts and one app for music seems to make sense. It's a nice separation for the 2 mediums"
- 20-30 yrs, male, Menlo Park, USA

"Why would I want two distinct things jumbled up together?"
- 20-30 yrs, male, Nashville, USA

To summarize, both quantitative and qualitative results were achieved from the online questionnaire. The *quantitative* results gave an indication of the target group and how people interact with their audio platforms; in what situations people consume audio from a video platform; how many percent listen to music; who switches between audio platforms, etc. The *qualitative* results gave answers to why people interact as they do. This was categorized into four themes and later analyzed with the results from the street interviews (see section 4.5).

4.5 Street interviews

There were 21 participants in the street interviews. The qualitative data were analyzed with the KJ method, see section 3.9. Questions from the street interviews can be found in Appendix II, and in this section (4.5), the main results relevant for later stage research are presented.

As with the online questionnaire, the most insightful data regarded how users interact with different platforms on their devices. After analysis and interpretation of the street interviews, two themes resurfaced; **availability** and **context**. Presented below are a selection of quotes from street interviews, to illustrate these two identified themes;

"I don't even listen to Jay-Z anymore because his later stuff isn't on Spotify"
- 20-30 yrs, male, chosen archetype: influencer

"[I switch from] music to podcast once I get to work"
- 20-30 yrs, female, chosen archetype: influencer.

"I toggle between music and audiobooks when I switch physical locations [home and work]"
- 40-50 yrs, male, chosen archetype: influencer.

"It's frustrating when you accidentally turn off the screen while using the Youtube app and then have to re-unlock your phone to restart the video or audio"
- 20-30 yrs, female, chosen archetype: organizer.

"Spotify is the best for music. Apple Music is the best for podcasts"
- 40-50 yrs, male, chosen archetype: fan.

These quotes are useful for the primary reason street interviews were carried out - to find out about listeners use of audio platforms and what triggers them to switch between them. Since the above-mentioned themes surfaced in answers from both the online questionnaire and the street interviews, they are assumed to have relevance regarding users' problems and concerns. Furthermore, these themes were later further developed and explored in the in-depth interviews.

Moreover, especially if comparing the street interview results with the results from the online questionnaire, the street interviews also gave insights on other topics. In other words, these two research methods in combination sparked an internal project discussion of the need to further refine the target user group.

The discussion consisted of having the two archetypes *organizers* and *influencers* constituting the main target, with the *organizers* as a higher hierarchical level, and *influencers* as a more niche power user. The reason that the *fan* archetype was eliminated was that the *organizers* and the *influencers* were a better match for the surfaced themes from the online questionnaire and the street interviews.

In addition, arguments were made for expanding the age of the target user group to 20-40 years old, as well as ascribing slightly more emphasis on the older half (30-40 years old) when referring to the *organizers* archetype, consequently ascribing slightly more emphasis on the younger half (20-30 years

old) when referring to the *influencers* archetype. The line of reasoning is that people who are slightly older are likely to have less free time available, examples being that they are further advanced in their careers, more likely to have children etc. Consequently, they are in more need of organization and effective listening. Slightly younger people have more free time and generally live more socially active lives, making influencing an important currency as it affects the social status of the individual. This is further discussed in section 5.2.

To summarize, the street interviews resulted in a number of questions to dig deeper into through in-depth interviews. For example, what *context and mood* really means, and how these influence an individual's choice of audio type.

4.6 In-depth interviews

The way listeners use their favorite type of audio varies a lot, and the eight in-depth interviews helped to dig deeper into their habits and concerns. The key findings from the interviews were two-fold. Primarily, the interviewees helped confirm the themes that surfaced during earlier research stages focusing on objective one and two, namely *identifying the target user group* and *investigating the frequency of use of different platforms and what triggers their users to switch platforms* (presented in section 1.3). Secondarily, by having in-depth conversations around these themes, deeper insights and new perspectives were gained.

Findings from the in-depth interviews were analyzed via the KJ method and categorized. Following are ten themes that arose during the interviews, many of which coincide with, or are similar to themes identified in earlier research stages. Under each theme, selected quotes are presented for illustrative purposes, followed by a discussion on the theme and how it is relevant for this project. The discussion here is focused on users' habits and concerns and will not present any functionality that solves problems. Some of the quotes touch upon several themes and will consequently be presented under the most relevant theme, with the exception of one, which will be presented in two different themes. This is motivated under **Artist compensation** below.

Aggregation

"Podcasts I haven't gotten into as much as I probably should. I find I don't have a lot of time to listen to a podcast in that way. Usually I listen to the news when I'm in the kitchen or doing something else."

- interviewee nr 1

"I don't have that many podcasts so I normally go through them and then I have to wait for the next week for a new episode to come out."

- interviewee nr 2

"Not constantly, I'm not in a habit of finding those, but I have checked out some great speeches, articles or podcasts. I don't drive, so I don't listen to radio, but I'm curious about [podcasts]. But I'm just busy and haven't spent time much to it."

- interviewee nr 3

"Something that can be frustrating is that there are so many different platforms for everything. I just find that it would be much easier if you could have it more gathered in one spot that connect you to let's say TED Talks, to Spotify, to YouTube etc. Just so you have it gathered in one place, because otherwise you have to have so many apps, you have to have so many different places you go to."
- interviewee nr 4

The idea of aggregating several types of audio, such as music, podcasts and news, within one digital application, was one of the main ideas underlying the entire project. These comments lie within the realm of said idea, and more or less validate that audio listeners at least are interested in investing more time in other audio types than music, for example podcasts. Going back to the results from the online questionnaire (section 4.4) where 95 percent of respondents listen to music and 47 percent listen to podcasts, and the contextual background (section 2) which shows that the podcast industry is growing by the minute, one can make the assumption that having an application where both these mediums can be enjoyed could be beneficial for people in the target user group. In addition, when presented with the option of having all audio in one application, 64% of respondents answered 'yes' in the online questionnaire (see section 4.4).

Discovery

"I have a friend who works for a [big music label] and she loves music. I reach out to her every once in a while, and ask her what's new and what kind of music is she listening to right now. Then she'll just give me a bunch of names [and I] just put them into Spotify."
- interviewee nr 2

'Tidal is such a small group that they know who's listening whereas to Spotify, everyone is listening so I end up doing the World's Best 50 playlists, to see what everyone is listening to. In Tidal, Beyonce makes a playlist and that's an easy choice to make that [available] offline immediately. Of course, I'll probably like most of it."
- interviewee nr 5

"There's something special about knowing the next up and coming band and go to their show before they get big."
- interviewee nr 6

Many comments from these interviews regarding discovering new audio revolved around the fantasy, or reality, of having a go-to friend for discovering new audio. Notable here is that these people more often than not chose the *organizers* or *influencers* archetypes, and did not identify with the music fan archetype (58% chose *organizers* and 22% chose *influencers*).

Recommendations

(on comparing recommendations through Spotify and Pandora): "I think Pandora starts out worse, because there's a broader range of artists that they're trying to say: hey, do you like this, do you like this, do you like this, but if you use it correctly and say, "I like this song" or "I don't like this song", I think that their algorithm is better to where they get more precise of kind of what you're looking for in your music. Spotify base it on other subscribers so they say: all these subscribers likes this song, and you like this song, and they all like this song so you should like this song too. It doesn't always work that way."
- interviewee nr 2

"I'm so often disappointed with [digital recommendations]. I much prefer to put on a radio station with a DJ that I trust. Something that's curated with someone who's guiding you. I like to hear something new, and Pandora does that sometimes, but I feel like it doesn't really hit the mark very often. I just think it doesn't know me."
- interviewee nr 1

"I feel like there are different aspects of different music that I like, that [streaming services] not necessarily are going to pick up on. If I type in King Crimson for example, I might also want to hear Bartok, a classical composer. For me that makes perfect sense, but there's no streaming service that will recognize that, because one is classical, one is classic rock. I feel like there are more bridges between music than [streaming services] recognize, and so I'd rather listen to an eclectic DJ."
- interviewee nr 2

This theme builds on the former theme, **discovery**. However, it only accounts for recommendations from within any music platform, and not an external source. Comments from interviewees regarding recommendations varied: many like Spotify's *Discover Weekly* playlist, whereas others like Pandora Radio's artist- or song-based recommendation playlists. A common opinion, as exemplified in the third quote above, is that Spotify's playlists are sometimes too generic and do not reflect the taste in music of an individual music listener, but rather the taste of the music industry. Spotify's recommendation model is built on songs gaining popularity (Pierce, 2017). A hit song is rigorously tested through their small-scale playlists that do not have many followers before the song hits the most popular playlists with millions of followers. Carrying the most popular songs could, and apparently does, hurt personalization when it comes to recommending songs for an individual, as exemplified by the second quote that rejects music platform-based recommendations altogether, saying they do not hit the mark nor know the person. This concern essentially says that there is room for a more personalized experience.

Song not available

"If I just wanted audio, I guess actually YouTube would be the place to go, simply because people upload so much on there, and even if it's not an original video, they slap on their own video footage and then they upload the song. Once I find it there, I will look for it on Spotify, and then Soundcloud also. But there are some things I can't find on Spotify or Soundcloud, maybe just only on YouTube."
- interviewee nr 7

"I wish Spotify was more on newer music. I rely on Tidal for the new stuff to be released because I'm assuming more of what I like will be there, but that's not always true. Sometimes Spotify gets it and Tidal doesn't. It's frustrating that I can't rely on one service to always have the newest thing."
- interviewee nr 5

These quotes support the aforementioned notion that the audio landscape is very fragmented (section 2.2), and that some users switch between several platforms to find the desired song, artist or album. The archetype that switches between audio platforms the most is the *influencers* – 72% of people who identify with this archetype switch between platforms at least once a day – which could be because they find the struggle of switching platforms to find a specific song worthwhile.

Mood

"The very last time it was music, it was this morning walking to class. I have a 20-25-minute walk every day. It's finals time so I'm stressed out - it was definitely closer to metal this morning. Actually, it was a lot of punk too."

- interviewee nr 6

"I'm one of those people who, if I'm really sad, I need to listen to music that evokes these emotions and I just can like let them out. Pour them out and get it over with, so that I can move on with the rest of my life"

- interviewee nr 7

"[Music] mostly provokes a feeling that I'm looking for in that moment, or a feeling that I'm trying to relate to on some level. Each day it's different."

- interviewee nr 6

The interview results illustrate that many people use music to match their mood, or even the other way around, i.e. using a specific song to get into a desired mood. This is a listening habit Spotify has tapped into with the way they are basing a lot of their playlists on different moods (Pierce, 2017). In theory, this is probably a good way for Spotify to differentiate themselves from other music platforms. In reality, mood is a very difficult human component to soundtrack. Although genres like 'tropical house' often revoke a 'summer lounge' type feeling and 'death metal' sometimes reflects a person's angry side, every single person in the world reacts slightly differently to the same song. Once again, as mentioned above, this makes room to create a more personalized experience where an individual can enjoy 'hardcore punk' on the most sunny and calm day, even though Spotify's *Summer Vibes* playlist (103,148 followers) does not carry one single punk song (Spotify, 2006, version 8.4.3). This type of personalization is obviously difficult to facilitate for such a wide-spanning music provider such as Spotify, but the desire is nonetheless there.

Music as a tool (passive mode of listening)

"I use music to get pumped up for a workout or to go on a run. When I was in school studying I would use music to calm down and focus. I use music at the end of the day to calm down and forget my day if I'm stressed. [Without music] I wouldn't be able to adjust to my moods."

- interviewee nr 2

"If I'm home, do I need to focus on doing my budget or do I need to focus on updating my resume or setting up my to do list for the week, visualizing the life I aspire to create, for myself and humanity."

- interviewee nr 7

"When I'm listening to audio that is not music, it's almost always a concentrated effort, so I'm normally sitting down, either trying to learn something or trying to get experience from other people. Either case, it's more of a single activity that I'm trying to do, versus when I'm walking to school thinking about my day, getting my coffee - then it's a background companion for me."

- interviewee nr 6

"There's a compartment for wake me up music, keep me in the gym music, relax of course, go to bed, let go of the day music, get into meditation mode music, yoga music. This is generally how I go about it in my head."

- interviewee nr 7

As the music industry undergoes a shift from hard copies like vinyl and CD to streaming (see section 1.1 and section 6), more people have access to an almost infinite catalog of artists and songs. One consequence of this shift can be seen in the way people interact with their music. More people are now using music or other types of audio as a tool, e.g. to create a mood, rather than for the actual purpose of listening. This builds on the discussion about Spotify above (theme: **mood**). In addition to mood-based playlists, Spotify also has contextual playlists such as *Motivation Mix* (1,450,488 followers), *Yoga Today* (14,017 followers) and *Dinner Music* (309,634 followers) (Spotify, 2006, version 8.4.3). This supports the aforementioned idea that people use music passively, meaning they do not want to interact with the application when they are listening.

Active mode of listening

"I always want to know what I have and I want to know what I want to listen to but it's like swimming in a pool of too many resources - I can't choose what I want"
- interviewee nr 3

"I'll go back and redo old playlists if I feel a song gets tired out, or they don't fit with what that specific playlist is supposed to match. I'll consistently make new playlists as time goes on, as I discover new music, and it ends up in this month's new music playlist and then eventually that month's music playlist will get filtered out into more specific playlists. I won't go back to [the monthly playlists] that often but I still like songs in it, so I'll end up filtering them out."
- interviewee nr 6

"This week, just recently, I just got into this singer named Ally X. I knew about her because she has written a lot for Joy Savan, but I've never listened to her own stuff, and she is coming to New York this week!"
- interviewee nr 8

In addition to the passive listening experience, some people still want to actively engage with their music, build self-curated playlists or see concerts. One concern with today's music consumption is articulated in the first quote - the fragmentation of a currently overloaded landscape. This can be perceived as confusing and stressful; even if one does intend to engage with their music, there are too many options to choose from. The next theme, **Tactile experiences**, also relates to the users' active engagement with music.

Tactile experiences

(on the tactile aspect of listening to music): "It's what it signifies – for me there's a difference between active listening and passive or just light listening. When I go through the process of picking a record out, putting it on the turntable, I'm more likely to sit and listen to it. I like to actually sit down and listen to music. I like the actual effort required in putting it on and getting it up and turning it over. I even like that a record is programmed into side A, side B, so you have to pause in between. I think it's the actual physical aspect of it which I enjoy, with the artwork etc., but also just the experience of having it be a little deeper and a little more intense."
- interviewee nr 1

"I know you can get all the liner notes and the stuff digitally, you could sit there and look at your phone, but I never do it. But when I put a record on and I'm listening to it, especially if it's a new one or something I don't know that well, I'll take the sleeve out - who is this, who's on here, where was this recorded etc. I like doing that."
- interviewee nr 1

"Listening through streaming services, you don't get all the information. I feel like I come closer to the artist [when I buy hard copies] and then I feel really proud of it. I contributed to their artistry. And all the little details, like the booklet and designs and texts within, I know that it can seem like really little [for the artist], especially when you use streaming services but I know it's not. It's something that you spend hours and hours on, and I know how valuable that is."
- interviewee nr 3

The tactile experience is something that few interviewees touch upon, but the ones who do really stress its importance. Therefore, it is deemed relevant to present here. This theme can be viewed related to the *active* side of listening to music. Most probably, the importance of a tactile experience is one of the remnants from the vinyl era, and is something some people still cherish.

Re-discovery

"I have this friend, she lives in Brazil but she's one of my best friends, now we used to listen to a lot of Rihanna together, so every time I listen to like a certain Rihanna song I remember her."
- interviewee nr 8

"These were the songs that made my trip. Every time I listen to one of them I remember that trip, because these were the songs that we listened to all the time when we were there."
- interviewee nr 8

This is an interesting aspect related to nostalgia and the fact that, for many people, music is a well-known trigger of memories. Noteworthy is that this often was not a specific concern or problem for most interviewees, but when primed with a hypothetic feature of remembering old, favorite songs, many people were positive to the idea.

Artist compensation

"I buy hard copies almost exclusively to support the artist at this point, because I consume their music and I consume their content. They deserve something in return for the enjoyment I've gotten out of it."
- interviewee nr 6

"Listening through streaming services, you don't get all the information. I feel like I come closer to the artist [when I buy hard copies] and then I feel really proud of it. I contributed to their artistry. And all the little details, like the booklet and designs and texts within, I know that it can seem like really little [for the artist], especially when you use streaming services but I know it's not. It's something that you spend hours and hours on, and I know how valuable that is."
- interviewee nr 3

To support the section about ethics and sustainability (section 5.4), it is relevant to present quotes about social sustainability and artist compensation in the music industry. Section 5.4 addresses the so

called “value gap” which regards problems around fair compensation for creators with the current drastic increase in music consumption and the business models currently in place.

The second quote, although presented under the **Tactile experiences** theme, is also highly relevant here. This theme is discussed further in the said *Ethics and sustainability* section.

To summarize, the above-mentioned concerns and habits expressed in the in-depth interviews, were organized into ten themes. The concerns and habits are later brought up in the first focus group where they are translated into suggested functionalities of a future aggregating digital audio application. The results of the focus group are presented and discussed in section 4.8.

4.7 Product testing

In anticipation of and preparation for the focus groups presented in section 4.8 below, popular platforms and their respective mobile applications were tested by the authors. This resulted in personal notes on positive and negative experiences regarding functionality and interface of each platform’s application. The authors’ product testing notes formed part of the basis and provided inspiration for the design of the focus groups, especially focus group A on user experience. Some examples of note topics and related thoughts and input to the focus groups are presented here:

Clutteredness
The Podcaster app developed by Apple came across as extremely cluttered - it seemed as though virtually all functionalities were displayed and accessible at all times. This led to designing focus group questions regarding *flat* versus *deep* information architecture within audio apps.

Play function
Tidal stood out with a both visually and functionally superior audio player. This cemented the importance of the play function in an audio platform and led to ideas regarding an app with an interface revolving around the player itself, emphasizing it as being the app’s core. Questions around this were designed for the focus groups.

Discovery function
As an example, Soundcloud and Apple Music deliver distinctly different ways of allowing the user to discover new music. Even the visual layout of the discovery start page differs a lot, e.g. some mainly use graphical symbols to communicate while others use images. This inspired questions for focus group A about what the pros and cons are with each approach as well as what is more visually pleasing and why.

Color scheme
Another important aspect of the user interface and experience of an application is the color scheme. For example, Spotify and Tidal have extremely similar color schemes to each other, but distinctly different from most other platforms and their applications. This led to designing focus group questions around how the color scheme affects different users.

4.8 Focus groups

In this section, results from two separate focus groups are presented and discussed. Both focus groups were designed based on the main idea of an aggregating digital audio application together with results from the earlier research stages, in particular the product testing described in section 4.7.

The purpose of the first focus group (A) was to give further insight into users' problems, concerns and firsthand experiences with audio platforms, as well as to provide inspiration for the functionalities of the future aggregating digital audio application. The purpose of the second focus group (B) was to gather feedback on ideas for which functionalities to include in the minimum viable product (Techopedia, 2017) of the aggregating digital audio application.

4.8.1 Focus group A - target users (4 participants)

This focus group, focusing on insight into users' problems and inspiration for functionalities, was divided into two main parts. The first consisted of brainstorming where participants worked in pairs around functionalities, followed by group discussions. The focus group guide can be found in appendix VI. The second part consisted of comparisons of selected visual components in popular audio applications, where participants first got to vote on their preferences and later discuss what made them vote the way they did.

The results were a collection of ideas on perceived problems of existing applications and suggested functionalities. The results were later analyzed via the KJ method and grouped into five themes, each corresponding to some aspect of the idea for the aggregating digital application. These five themes were:

Availability
This theme relates to issues around content exclusivity in various platforms and the effects this has on the user experience. This includes having to switch application because a specific artist, song or podcast is not available.

Personalization and targeting
This theme is about different ways of creating a more personally relevant and authentic experience when interacting with audio apps. It is also about building a deeper relationship with the apps that you frequently use. This spans all the way from potential ads being targeted enough as to always be of interest to each individual user, to granting users enough control over settings to a point where they do not feel restricted (and possibly that the app understands and knows them).

Active and passive mode
The session amplified two distinct ways of using audio applications which were labeled *active* and *passive*. *Active use* is any activity where the user must engage with the app in order to consume content. Examples include reading information around a song or an artist, reviews or lyrics; choosing songs from a playlist to add to queue; actively searching for a song by typing into the search field or navigating through the UI to find it. *Passive use* means activities related to automatic continuous consumption. This typically manifests as some kind of online radio station or autoplay functionality, where the user will be fed new content without having to engage with the application or the device.

Recommendations and discovery

This theme is intertwined with both *personalization and targeting* as well as *active and passive usage*. The results within this theme revolve around the intelligence in audio apps. One conclusion which was reached, extrapolating from the concerns and ideas that came up in the session, was that today's audio apps are lacking the ability to *truly understand individual* users and their particular tastes. Humans crave deep, authentic relationships - with other humans *but* also with devices, and certainly with those we interact with on a daily basis. Thus, one supporting functionality would be recommending both old and new songs that feel completely relevant and personal, which could facilitate the perception of a deeper relationship.

Related information
An intense interest in music pervades the target user group, and often an interest in other types of audio too. Also, people in this group tend to be open minded and curious (as described in section 4.2). Many of them are fans of audio on a high level, but they are also fans of certain artists or specific prominent persons. Consequently, they enjoy consuming related information around the main audio content, which can be anything from reviews of new albums, the biographies of favorite artists, articles on topics discussed in a podcast, or the lyrics for a specific song.

The ideas on functionality and concepts that surfaced from this focus group was further evaluated in focus group B, the results of which are presented below in section 4.8.2. This was done in order to stress test and further develop the ideas, and running them by a group of design professionals was considered a good way of achieving that.

4.8.2 Focus group B - design professionals (10 participants)
Multiple results were obtained from this session, the purpose of which was to gather feedback on ideas for which functionalities to include in the minimum viable product. Firstly, the idea for an aggregating digital application was well-received, which the authors interpreted as a sign of potential value. Secondly, as in the earlier research stages, participants expressed frustration regarding the "impersonality" of music discovery and recommendations as curated content on most of today's audio platforms, and viewed potential efforts to make improvements in a favorable light. Furthermore, the notion of aggregating multiple audio types in one platform was encouraged, with some participants describing spending significant time and effort each day switching between various audio platforms.

After presenting the ideas and concepts selected from focus group A, using rough sketches made in anticipation of focus group B (presented below), three of the sketches were prioritized above the others, while two of them stood out by raising particular concerns. The favored functionality concepts revolved around *tags, slider settings* and *context awareness.* The two concepts that raised concerns were *real time recommendations* and *double play buttons.*

Tags
This concept is tied to the personalization and discovery aspect of the audio app. The basis of the concept is that the focus group believed that traditional genres, in music as well as in other audio content, are often irrelevant to the individual user. In other words, traditional genres do not encapsulate one's personal preferences in music in an effective way. Thus, the idea with tags is to utilize machine learning to generate recommendations in the app and to allow the users to assign personal tags to each piece of content in order to teach the app what to recommend on a more personal level.

Slider settings
The term "slider settings" in this case simply describes a way of making binary settings non-binary or gradual. At this point in time, there are two examples within a typical audio app for which this concept is thought to be best applicable.

The first example is related to the *tags* system described above, as well as teaching the app what to recommend in the future. Today, most music apps present users with a binary choice of liking or disliking a song in order to affect future recommendations. The idea here is to introduce a selection of keywords in addition to the *tags* system, with a sliding scale assign to each word. These would be descriptive words such as "energy" and the sliding scale would in that case be "high" to "low". This would allow the user to rate a song as being at a specific point on the high-to-low energy scale, as opposed to rating it as either energetic or not.

The second example is related to the prospect of combining various forms of audio in an application. In such a scenario, it would be useful to introduce sliding scales to determine the proportion of each type of audio that will be recommended to the user. If the user increases the proportion of music, the percentage of all other audio types available will consequently decrease by as many percent as the music is increased.

Context awareness
This concept aims add another layer to the app's recommendations and overall behavior, namely context awareness. Again, using machine learning as well as synchronizing data from external apps, many contextual factors could be taken into account. For example, from knowing a user's geographic location, the app might sense that they are in the vicinity of a gym. If this happens enough times, the app might be able to assume that this is in fact the gym where the user goes to work out, and suggest a personal, fitness-related playlist the next time the user arrives at the gym.

Another idea is to request frequent feedback on the user's mood during the initial period of using the app. This, combined with data from other apps, might enable the app to identify patterns in the user's mood related to specific activities and time of day. Subsequently, it could provide recommendations based on varying moods.

Real-time recommendations
One concept that raised concerns during this focus group was the prospect of using voice and text recognition to generate real-time recommendations while consuming audio. These recommendations could be anything from links leading to related articles to good deals for purchasing concert tickets. To illustrate, if a user is listening to a podcast in which an artist is discussed, the app might recommend a link to buy tickets to a show with this particular artist. The concerns with this concept were that users are sensitive to interruptions in the interaction with their apps. Also, some participants argued that it would give the app too much of a promotional feel.

Double play buttons
This concept springs from the two kinds of use that surfaced in focus group A - *active* and *passive* use. The idea was to design two distinct play buttons readily accessible in the app interface - one for active and one for passive use - in order to minimize time and effort required when going back and forth between the two ways of using the app. The concern here was that, if the app operates by

aggregating several platforms and audio types into one interface, it might become confusing for users to have more than one play button.

4.9 Key functionalities

In order to prioritize key functionalities for the development of a potential new aggregating audio app, taking all other results into account, a final internal workshop was conducted by the authors. The result from this workshop was three themes and a set of functionality concepts, where the three main concepts are presented in this section, each organized under one of the three key themes. Note that the selected functionality under each theme is only one of many possible functionalities on said theme. The themes were chosen because they appeared the most consistently in various results throughout the project.

Theme: *Aggregation*
Functionality: *Slider settings*

This theme is about aggregating several audio types into one app. The target users demonstrated a desire for a greater ability to organize their audio. They also expressed frustration that different audio types and content are spread over various platforms and not accessible in one place. Two-thirds of the online questionnaire respondents claimed to prefer a single platform for all their audio. However, introducing several audio types in one app creates new design challenges in order to sustain or preferably improve usability compared to existing apps.

The functionality concept called *slider settings* aims to solve the design and usability challenge of such an aggregation, i.e. a simple way of switching between these types of audio. It is the same as the second example presented in section 4.8.2, i.e. it is applied as a way of setting up in what proportion each audio type will be recommended to the user, and could be part of the app "settings". The concept builds on the fact that music is the most important audio type for the target user group (section 4.4) and it can be designed in different ways. Two examples are presented here:

Slider and menu - with this approach, the interface of the app would contain one slider and one menu. On one side of the slider would be music, which is the baseline type of content for recommendations. On the other side would simply be "other content". Users would then be presented with a menu containing all other types of audio accessible through the app, where the user would choose which audio types should be included in the "other content" side of the slider. After doing so, the user would be able to position the slider at the preferred mix of music and "other content" for recommendations.

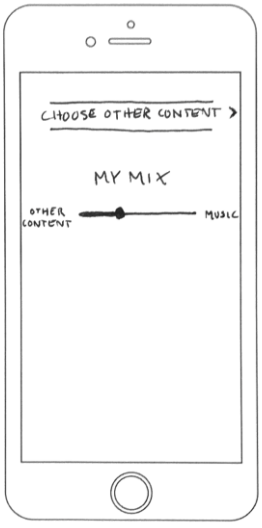

Figure 1. A simple example of what the slider settings function could look like. Other content is available at the top bar. Authors' own rights.

Figure 2. The menu where the user can toggle other types of audio than music on and off. Authors' own rights.

Multiple sliders - this approach is a bit more detailed and flexible. In the interface of the app, the user would be presented with one slider for each type of audio accessible through the app. The default setting for the mix of recommendations would be 100% music. Then, through the designated sliders, the user would be able to blend in the preferred amount of each audio type into the mix. The percentage of music in the mix would then automatically adjust from 100% to whatever is ”left over”. For example: if the user mixes in 30% podcasts and 20% TED talks, the music would automatically jump down to 50%.

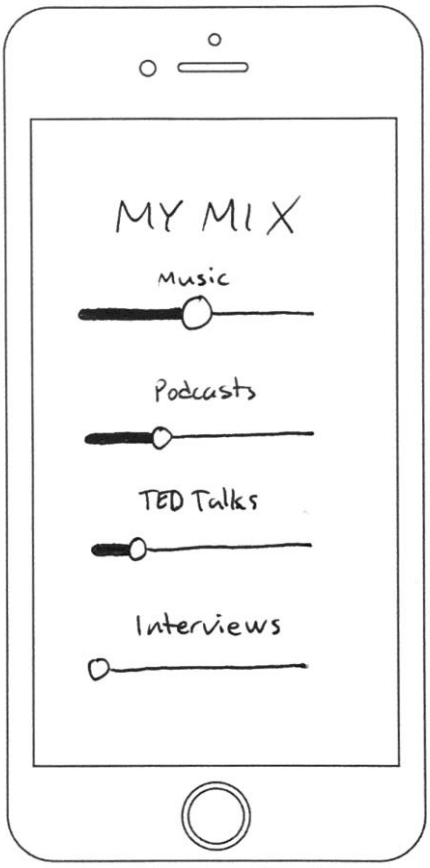

Figure 3. Example user interface of slider settings where the content is controlled on the same screen. Authors’ own rights.

Theme: *Personalization*
Functionality: *Tags*

One of the problems most frequently expressed by target users in previous research was that recommendations in
today's audio apps often come across as irrelevant and impersonal. Another concern was that traditional genres in music do not correspond with the space certain songs occupy in the individual users' minds. Add to this the aggregation of various other audio types in the same application, often labeled with a whole other set of genres than music. These factors point to the need for a different system for labeling content.

One solution to this problem that was well received in focus group B is the concept of *tags*. This concept is a system for machine learning in which each piece of content, taking a song as an example, is labeled with two sets of tags - *hard* tags and *soft* tags - instead of one specific music genre.

Hard tags are permanent tags used in the back end of the application to organize and keep track of all available content. Examples of hard tags would be song name, producer, podcast title, topic discussed, etc.

Soft tags are personal tags assigned to each piece of content by the users themselves, effectively organizing the content in the same way it is organized in the mind of the individual user. Using these tags in combination with the hard tags and other data describing the nature of the content, the machine learning part of the app can start making the same connections between content as the individual user does, allowing the app to generate recommendations that feel truly personal and relevant. Examples of such tags are emotionally loaded words like *chill, power, sun, red.*

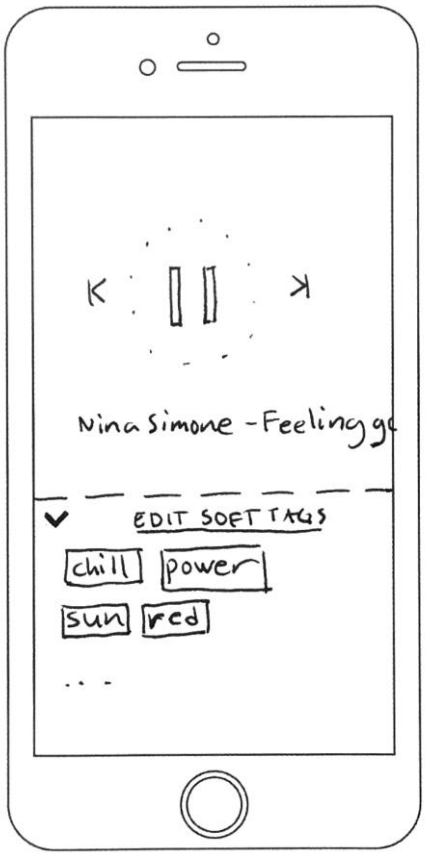

Figure 4. A prototype of the tagging system. The user can edit its own tags in the bottom square. Authors' own rights.

Theme: *Active and passive modes of listening*
Functionality: *Double play buttons*

One realization reached during the project was that users, regardless of what archetype category with which they primarily identify, have two main modes of listening to audio. As a consequence, they use the same app in two distinct ways depending on which mode they are in. Sometimes, they begin with a piece of content in mind when they start listening. Naturally, they then open the app they need and continue to manually locate and select that piece of content. In this project, this mode of listening is referred to as *active.*

Other times, for example, they only know that they want to listen to music - perhaps while simultaneously performing a different activity such as cooking or cleaning. This means that they are in a *passive* mode of listening - they want to hear a continuous flow of music but do not wish to have to interact with the app.

To make the initial choice and possibly switch between active and passive modes of listening as smooth and efficient as possible, a functionality concept called *double play buttons* was ideated. In this concept, the interface of the audio app features two distinct play buttons - one that will initiate the *active mode*, the other that will initiate the *passive mode.*

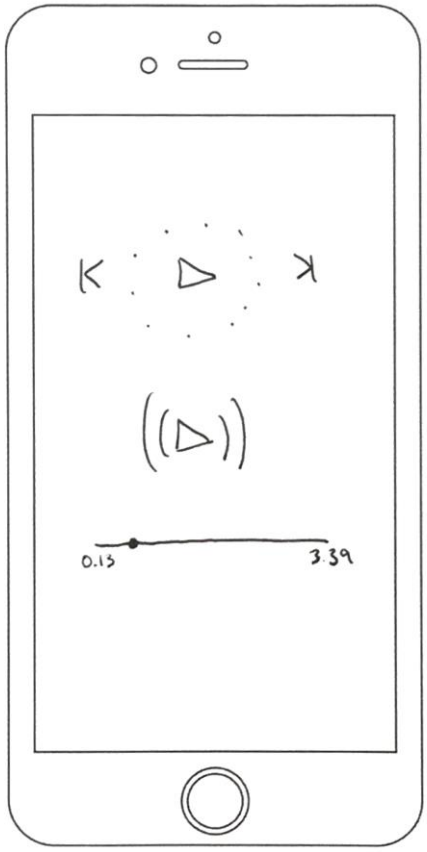

Figure 5. A prototype of the "double play button" function, where the top one controls the active side of listening and bottom one starts the user's personalized auto play (the passive side). Authors' own rights.

An example of an interaction with the *active* play button would be if a user carefully selected some songs to put in a playlist. In the middle of the first song in the list, someone says something to the listener who is then forced to pause the music in order to hear what the other person is saying. When the conversation is over, the user might want to return to listening to the playlist she formerly curated for herself. All she has to do then is press the active play button and the music will resume where she left off.

If, however, after a while the same user grows tired of the music in the list but still wants to keep on listening to music, she might press the *passive* play button which will trigger the app to enter an auto-play mode, generating relevant recommendations for both old and new music.

In section 4.8.2, this concept was presented as one of those raising concerns among the participants in focus group B; the main concern being that two play buttons might be confusing while at the same time aggregating several types of audio into one interface. However, previous results, e.g. described in section 4.6, point to the fact that the two modes of listening described here are a vitally important distinction to make when considering key functionality in an audio application.

Therefore, taking the concerns of focus group B into consideration, an additional expert opinion was sought. An interview was conducted with Kristine Woolery – Senior Design Strategist, Inclusive Design at Microsoft.

In summary, Kristine agreed that having two buttons might be confusing, especially from an inclusiveness perspective:

"One thing that I thought about as you were talking, I was like I don't know if two play buttons… like, my immediate reaction was I don't know about two play buttons, but if there was like a simple interaction that would take me from active to passive, like a double touch or some other way to communicate you know? Like, what is this sort of intuitive way that someone would… so I usually challenge myself by thinking about what I would do If I couldn't see for example... [maybe you hold it down longer or something that is… I don't really know exactly what it would be]. But yeah, what are the other kinds of interaction models that you could use that could get you from active to passive? That might be something worth exploring… "

However, she also supported the idea behind the concept, namely two modes of listening:

"The active/passive makes a lot of sense to me, like if I think about how I use… so I have used Pandora and Spotify but I use them in different ways. What I like about Pandora is I can have passive, but I can put a timer on it and I love that! [I don't use it all the time but sometimes I will put it on for like thirty minutes]. Spotify doesn't have that feature, so I don't use Spotify for those situations"

To clarify, this concept is merely an example of one possible functionality solution catering to *the underlying need* among users to be able to effortlessly switch between the *active* and *passive* modes. The concept simply demonstrates the importance of taking advantage of the opportunity to solve this problem of different modes of listening when developing the future aggregating digital application.

5. Conclusion and reflections

To reiterate, the first aim of the research was:

to determine as thoroughly as possible whether or not there exists a need for an aggregated digital audio application and, if so, identify the potential user group(s) with such a need.

The second aim was:

to better understand the potential user group(s) as well as identifying potential key functionalities for the application.
.

The specific **research objectives** were:

1. to verify and distinguish the target user group

2. to investigate the frequency of use of different platforms for typical users and what triggers them to switch platforms

3. to examine usability and functionalities of existing audio applications

4. to ideate around potential key functionalities in future audio applications

Through the methods employed in the project and their results, including identifying and refining the target user group, mapping their habits and concerns regarding audio platforms, and gathering expert opinions on functionalities in mobile audio applications, the basis of a potential digital audio application, including some ideas of key functionalities, has been created.

In this concluding section, several topics are discussed; the research process, the refined target user group, ideas for potential future work, ethics and sustainability, and this project's impact.

5.1 Reflection on the research process

Generally speaking, since the research project is carried out with a linear approach, meaning later research stages employ results from the earlier stages, it is of high probability that the end result is of a high quality and based on potential users' real needs. The presented key functionalities have however not been tested and verified, either by users or industry experts.

Naturally, several crucial decisions influencing the direction of the project and the results have been taken along the way. If other decisions would have been made, the results would not have been the same. A few of these decisions and other potential pitfalls are chronologically presented and discussed here.

Choice of methods
Initially, the research methods were chosen based on the idea of the aggregating digital application (presented in the background section) and what kind of data were desired. This was iterated throughout the project. Some methods ended up being scrapped, partly because of a realization of

what types of methods would work the best 'in reality', but also because of time limitations. For example, it was initially intended to carry out methods like *direct user observation and storyboards.* The former was however deemed not relevant at that stage in the research or design process, whereas the latter would have been helpful if there had been more time. Overall, the time constraints (i.e. too many research methods initially chosen given the length of the project) was something that could have had an impact on the quality of the results.

Low numbers of participants
Due to the project's limited resources, the number of participants in some research methods, e.g. the first focus group, was quite low, as well as each focus group (A and B) only being conducted once each. This is something that potentially impacts the credibility of the results. In the first focus group, four people from the target user group participated, instead of the 6-8 people which were desired. Additionally, there were 24 interviewees for the street interviews, which was desired to be higher. However, both the online questionnaire, with 343 takers, and the second focus group, with 10 industry experts, reached the desired numbers of participants.

5.2 Refined target user group for the digital application

The archetypes developed in section 4.3 were, after insights gained from subsequent research (e.g. street interviews), iterated and refined. The idea of refining the target user group around two archetypes instead of three was based on insights from the online questionnaire results (section 4.4) and the street interview results (section 4.5). Noteworthy here is that the first iteration of the target user group, defined in section 4.1, 4.2 and 4.3, was initially a target group for project advancement purposes. The second iteration of the target user group (concluded below) was made after analyzing street interviews (see section 4.5). This is also the target group for potential future work, and one that could be used for the development of the digital audio application.

The two remaining archetypes, *organizers* and *influencers,* constitute the main target user group, with the *organizers* as a higher hierarchical level, and *influencers* as a more niche power user.

The idea of the aggregating digital application presumed a fragmented audio landscape and a wish of having one's various audio types more easily accessible. From the online questionnaire results (section 4.4), the *influencers* were the ones that switched the most between several audio platforms, and were therefore deemed important to keep in the target group. In the same way, people age 20-30 years was the age group that most often switched between platforms. Putting these two groups together makes up half of the refined main target group - *influencers between 20 and 30 years of age.*

Another relevant theme, the need for a personalized experience in the world of audio platforms, was investigated in the online and street interviews. The results from the online questionnaire and the street interviews show that the *organizers* category desires this type of experience the most, where 48 percent use curated playlists (see section 4.4) - something that needs to be personalized to make sense to the individual user. These results, in combination with assumptions and insights around age and refined taste in music (see section 4.1) led to the other half of the main target group being made of up *organizers between 30 and 40 years of age*.

Important to note is that the archetypes, *influencers and organizers,* are not descriptive of any personality in its entirety– they are merely a way of describing some important traits within a

personality. This means that a person can identify oneself with more than one archetype – it is a matter of which archetype(s) that person identifies with the most.

5.3 Future work

There are many opportunities to take this project further. To be able to do this, a few recommendations of activities are presented here.

To increase the credibility of the project, the research methods would benefit from a larger sample size.

In addition, the key functionalities of the future aggregating digital application need to be further developed, implemented, tested, and verified through several design and testing stages, including user testing.

Naturally, the application needs additional functionalities, both inspired by current audio platforms but also, like the abovementioned key functionalities, something that sticks out and makes it a competitive product on the market.

A big challenge in taking the project further is to design the actual user interface - it needs to be clear and simple enough to be user-friendly. The challenge lies in achieving this despite the fact that the application would contain more content than any other audio platform on the current market.

The digital application is meant to be built on content provided by the popular platforms of today. As such, the entire idea rests upon the condition that mutually beneficial relationships between the developers of the digital application and the existing platforms can be developed and maintained, and that various licenses will be granted. The nature of and the potential to develop these relationships, and to grant licenses, are at this point unknown and much effort will have to be made towards building and obtaining them.

5.4 Ethics and sustainability in audio industries

In discussing the ethics and sustainability of the audio industries, there are of course many layers and perspectives that must be taken into account. Firstly, one must acknowledge that each individual industry hosts its own set of problems. For example, the audio news industry entails a different set of ethical and sustainability related dilemmas than the music industry does, e.g. revealing news trustworthy versus compensating artists fairly. However, the discussion here will focus on the music industry as it, while being an old and gigantic industry, is currently growing and facing radical changes (International Federation of the Phonographic Industry, 2016).

One of the most topical debates is the global explosion of music consumption, fueled by the increase in streaming, and the gloomy byproduct of this trend, namely the “the value gap”, which means that despite the drastic increase in music consumption, current business models and revenue structures do not support artists and creators in getting paid fairly for the music that is consumed (Moore, 2016). However, a case can also be made that the increase in music streaming has improved certain aspects of the industry, both in terms of sustainability and ethics. In 2016, streaming revenue overtook sales for the first time (Rys & Levine, 2017). Assuming some of that decline in sales revenue comes from physical products, should it continue, a decrease in the production of physical products will be

justified. This could in turn contribute to sustainability by leading to less consumption of raw materials associated with the production of hard copies such as CDs or vinyl. It might also lead to improvements from an ethical standpoint as some jobs in producing countries with questionable work conditions will be eliminated. Of course, this in turn can lead to other unwanted outcomes such as increased unemployment. Furthermore, streaming is connected to digital devices and an increase in streaming must, to some degree, correlate with an increase in the number of digital devices. Unfortunately, such devices are not typically produced in environmentally friendly ways at this point in time.

Another not so obvious subject worth discussing is the inequality in opportunities that exists in the music industry and certainly in other audio industries too. This is not typically part of the ethical discourse - most probably because it is non-specific to the audio industries. In fact, it exists in various forms in virtually all industries. When looking at playing music as a profession, an argument can be made that people living in certain countries and locations have a greater chance of being able to sustain themselves from the income of their music. In theory, there will be equally as much inherent raw talent in a city in a developing country in Africa as in Brooklyn, New York. Yet, someone growing up in Brooklyn will have a much greater chance of developing their talents because of the established music culture and the immediate influences they will be exposed to. They will also be surrounded by better circumstances to participate in music as a profession because of the surrounding economic structure that is already in place.

A more positive aspect of the effects of origin and ethnicity is that racism and discrimination may play a slightly smaller role in determining the fate of aspiring individuals in the music industry than in other industries. Per definition, the nature of the origins of various genres in music promotes and encourages diversity.

These are just some of the layers of sustainability and ethics that could be discussed in much more depth should that have been the focus of this thesis project. As previously mentioned, one of the most pressing and topical issues seems to be the social sustainability of the music - particularly artist compensation and the general economic structure of various businesses in the industry as music consumption keeps increasing in a rapid pace.

To delve into this topic further, an interview was conducted with Bill Schacht - a music industry veteran with 25 years of experience. He has worked with top artists and entertainment companies, on a wide spectrum of tasks including marketing, events, video and web design. Right now, his focus lies on developing a new music format around virtual reality and augmented reality called '*The orb'* (Schacht, 2015).

Regarding one main sustainability topic related to this thesis project, **compensation for artists**, Schacht believes that the industry is facing changes. He argues that the industry used to belong to the artists themselves before big business and huge music labels entered the picture. With this change, the music industry shifted from having a focus on artist-driven creative outputs to making hits for the charts. The labels thrived on the change of pace and made more money than ever. The labels' control over the hit-making business was also highly egoistic. Schacht also writes in his blog *"If it didn't stick, wipe off the wall and move along. If 1 or 2 out of 10 acts popped, so did the corks. Those other 8 or 9 careers? Collateral damage. Prince scrawling 'slave' over his face was a defining image."* (Schacht, 2015). Schacht is here referring to the time Prince scribbled "slave" on his cheek to point out the tyranny of music labels (Heller, 2016).

This era was, at least partly, overtaken by the recent rise of streaming services (see section 2.1), where now technology (i.e. the people behind the biggest tech media companies like Spotify and YouTube) instead has increasing power over our music consumption. *"For worse and better, bits and bytes, hardware and software became the new rule, the robots soundly defeating the bankers as the music business' new masters"* Schacht continues in his blog (Schacht, 2015).

Tidal, which is a fairly new music platform, went into business with the main purpose of better compensating artists, and they succeeded (informationisbeautiful.net, 2017). Taylor Swift, one of the biggest pop singers of today, proved she had power over one of the biggest streaming services when she chose to close the door on Apple Music for her 1989 album release. According to The New York Times, Apple Music later changed their entire artist compensation plan to comply with Swift's demands of her and others getting paid fairly (Sisario, 2015). Could this be the next shift of the music industry? Is the power on its way back to the artists themselves? After all, artists are the ones who are creating; without artists, there cannot exist a music industry.

Bill Schacht suspects that the big labels will fail to adapt to this new dynamic. *"It might be 10 years until they start to suffer from it, but eventually it will happen"*, he claimed in the interview. When this happens, he projects two likely outcomes:

1. The big streaming companies such as Spotify and Apple (Music) have a chance to sweep in and overtake the old labels, adapting and catering to the demands of artists.
2. Should these companies fail to do so, new companies with entirely new business models, such as Amuse (www.amuse.io) (authors' comment), will surface and gradually take control of the industry.

5.5 Research impact

The results and conclusions in this project make a solid case that there indeed is a potential user base and need for an aggregating digital application of the nature described in the background section. The results show that there exists a frustration, at least in a subgroup of users, with the clutteredness of the audio consumption landscape of today as well as the user experience within specific audio platforms and applications. In much the same way that contemporary record labels such as Amuse (www.amuse.io), mentioned in section 5.4, are poised to outcompete traditional labels should they fail to adapt to the needs of the market, there is an opportunity for a contemporary audio platform to surface and compete with existing popular platforms for audio – creating a more seamless, organized and personalized user experience. Thus, this project makes a significant contribution to the potential development of such an application – by identifying a potential target user group; by proposing key functionalities that could and should be built into the app; and by pinpointing areas ripe for further exploration and research.

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Appendix I – online questionnaire

1. Which of the archetypes do you identify with most?
2. What country do you live in?
3. What city do you live in?
4. What gender are you?
5. How old are you?
6. Do you use streaming services for audio? (music, podcasts etc.)
7. Do you pay for any such service?
8. Why do you consume audio? (music, podcasts etc.)
9. What types of audio do you consume? (pick one or two from a list)
10. What platforms do you primarily use for consuming audio?
11. Where do you typically consume audio?
12. At what time do you typically consume audio?
13. How many times did you toggle between audio platforms yesterday?
14. What was the main reason for switching between said platforms?
15. Do you like having your audio platforms separated or would you prefer having access to all your audio on the same platform?
16. The last time you discovered a new song, how did you find it?
17. In the last three months, have you created a playlist on any of your audio platforms?
18. Do you use Spotify's *Discover Weekly* playlist to find new music?

Appendix II – final version of street interview questions

IF THE INTERVIEWEE USE MORE THAN ONE AUDIO PLATFORM

1. Which profile do you identify with most?
2. Do you use streaming services?
3. What types of audio do you listen to? How much time yesterday?
4. Tell me about how you typically use them?
5. Have you ever had trouble deciding which of them to use?
6. Why did you have trouble deciding?
7. When was the last time you switched between them to listen to a different type of audio?
8. Where were you then?
9. Have you ever given up on listening to something you wanted to listen to because you didn't feel like taking the time to switch between platforms? (e.g from Spotify to YouTube or Soundcloud)
10. How did you find the last song you liked? What made you like that song? (examples of feelings/situation)
11. Do you use the queue function?
12. **BONUS**: Would you mind showing me your most recently used audio app and, if possible, queue three tracks? Why did you choose them?

IF THE INTERVIEWEE ONLY USE ONE AUDIO PLATFORM

1. Which profile do you identify with most?
2. Do you use streaming services for audio? Which ones?
3. How do you use it?
4. How did you find the last song you liked? What made you like that song? (examples of feelings/situation)
5. Do you use the queue function?
6. **BONUS**: Would you mind showing me your most recently used audio app and, if possible, queue three tracks? Why did you choose them?

Appendix III – final version of in-depth interview guide

Subjects of discussion	**Examples of questions**
3 min Relationship to music	• What kind of music do you listen to? • What do you like about that music? • Do you like any other types of music? • How come you like that music? • What is your best music related memory?
2 min Relationship to audio in general	• What types of audio do you listen to (other than music)? • If you no longer were able to listen to your favorite types of audio - how would that affect your life?
3 min Use of different platforms	• What platforms do you use? • What do you do when the song/podcast/audiobook you are looking for is not available on a platform? • Which platforms do you pay for and how do you justify paying for them?
3 min Reason for choosing	• What went through your head the last time you pulled out your phone and chose which type of audio to listen to? • Which situation were you in? • How did that affect your choice?
3 min Reason for switching	*Walk me through the last time you switched between platforms.* • Why did you switch? • Which concerns/frustrations did you encounter in the process of switching? • How did it affect your overall listening experience?

2 min Organization	• Are you generally an organized person? • How do you organize your audio? • How do you organize apps/social media etc.?
3 min Discovery (Music)	• How did you find the last song you liked? • What made you like it? • When are you most receptive to new music? • What do you usually do when you find/save a new song?
3 min Mood	• What affects your mood during the day? • How does your mood affect what you listen to that day?
3 min Context	• In what situations do you typically listen to each audio type? • Does music trigger memories for you? • What kind of memories?
(Only for influencers):	• What do think your friends say about your taste in music? • How do you think about sharing music? (NOT PIRACY but sharing w/ friends) • Do you take pride in finding the best new music?
BONUS: Physical/immersive	• What is your relation to hardcopies of music? (CD, vinyl) • Do you ever miss the tactile experience? • What do you miss? • Do you enjoy having access information around a song or artist (bio/lyrics/notes)? • Does that add value to your experience?

Appendix IV – data from online questionnaire

(note: these results are calculated at a total of 329 answers)

General Insight

1. If you had to choose one, which of these profiles would you identify the most with as a person? 329 responses

- Christina Carlton - 148 / 45%
- Cory Anderson - 52 / 16%
- Matthew Griffin - 50 / 15%
- David Zargo - 43 / 13%
- Zoey Macaroni - 22 / 7%
- Charlotte Evans - 14 / 4%

2. What country do you live in? 329 responses

- Sweden - 153 / 47%
- USA - 123 / 37%
- Other - 53 / 16%

3. Gender? 329 responses

- Female - 200 / 61%
- Male - 127 / 39%
- Other - 2 / 1%

4. Age? 329 responses

- 10-20 - 21 / 6%
- 20-30 - 208 / 63%
- 30-40 - 32 / 10%
- 40-50 - 52 / 16%
- 50+ - 16 / 5%

5. Do you use streaming services for audio? 329 responses

- Yes - 313 / 95%
- No - 16 / 5%

6. Do you pay for any such service? 313 responses

- Yes - 223 / 69%
- No - 90 / 29%

7. What types of audio do you listen to?

- Music - 297 / 95%
- Podcasts - 148 / 47%
- Online videos - 109 / 35%
- Lectures - 28 / 9%
- Audiobooks - 26 / 8%
- News - 26 / 8%

8. What platforms do you primarily use for consuming music? 307 responses

- Spotify - (40/54, 131/145, 9/14, 8/10, 65/77, 4/7) - 257 / 84%
- YouTube - (20/54, 54/145, 8/14, 3/10, 62/77, 2/7) - 149 / 49%
- Pandora - (9/54, 6/145, 2/14, 2/10, 11/77, 1/7) - 103 / 34%
- iTunes - (7/54, 23/145, 4/14, 0/10, 0/77, 0/7) - 34 / 11%
- Soundcloud - (6/54, 29/145, 4/14, 1/10, 11/77, 2/7) - 53 / 17%
- Apple Music - (2/54, 11/145, 2/14, 0/10, 0/77, 0/7) - 15 / 5%
- Tidal - (1/54, 3/145, 0/14, 0/10, 0/77, 1/7) - 5 / 2%
- Other - (6/54, 15/145, 1/14, 2/10, 10/77, 2/7) - 36 / 12%

9. What platforms do you primarily use for consuming podcasts? 155 responses

- Podcaster - (0/4, 70/145, 2/3, 1/3) - 73 / 47%
- YouTube - (1/4, 15/145, 1/3, 1/3) - 18 / 12%
- Soundcloud - (1/4, 14/145, 1/3) - 16 / 10%
- Acast - (0/4, 13/145) - 13 / 8%
- iTunes - (2/4, 42/145, 3/3, 2/3) - 49 / 32%
- Other - (1/4, 28/145, 1/3) - 30 / 19%

10. What platform do you primarily use for consuming audio from online videos? 83 responses

- Youtube - (2/2, 3/3, 77/77, 1/1) - 83 / 100%
- Vimeo - (0/2, 0/3, 5/77, 1/1) - 6 / 7%

11. Where do you usually consume music? 253 responses

- At home - (62/145, 7/14, 4/10, 39/77, 3/7) - 115 / 45%
- On the commute - (51/145, 6/14, 5/10, 23/77, 2/7) - 87 / 34%

- At the gym or equivalent - (14/145, 0/14, 0/10, 3/77, 0/7) - 17 / 7%
- At work - (10/145, 1/14, 0/10, 8/77, 1/7) - 20 / 8%
- In school - (7/145, 0/14, 1/10, 2/77, 0/7) - 10 / 4%
- At parties - (1/145, 0/14, 0/10, 2/77, 1/7) - 4 / 2%

12. Where do you usually consume podcasts? 151 responses

- On the commute - (73/145, 1/3, 1/3) - 75 / 50%
- At home - (52/145, 1/3, 2/3) - 55 / 36%
- At the gym or equivalent - (10/145, 1/3) - 11 / 7%
- At work - (9/145) - 9 / 6%
- In school - (1/145) - 1 / 1%

13. What platforms do you primarily use for consuming TED Talks or similar lectures? 15 responses

- YouTube - (12/14, 1/1) - 13 / 87%
- Other - (3/14, 1/1) - 4 / 27%

14. Where do you typically consume TED Talks or similar lectures? 15 responses

- At home - (11/14, 1/1) - 12 / 80%
- At work - (2/14) - 2 / 13%
- On the commute - (1/14) - 1 / 7%

15. What platforms do you use primarily for consuming audiobooks? 13 responses

- Audible - (5/10, 2/3) - 7 / 54%
- Storytel - (5/10, 1/3) - 6 / 46%
- OverDrive - (1/10) - 1 / 8%
- Other - (1/10) - 1 / 8%

16. Where do you typically consume audiobooks? 13 responses

- At home - (5/10, 1/3) - 6 / 46%
- On the commute - (3/10, 2/3) - 5 / 38%
- At the gym or equivalent - (1/10) - 1 / 8%
- At work - (1/10) - 1 / 8%

17. Where do you typically consume audio from online videos? 80 responses

- At home - (66/77, 2/3) - 68 / 85%

- On the commute - (2/77) - 2 / 3%
- At the gym or equivalent - (2/77, 1/3) - 3 / 4%
- At work - (2/77, 1/1) - 3 / 4%
- At parties - (1/77) - 1 / 1%
- In school - (1/77) - 1 / 1%

18. What platforms do you primarily use for consuming news through audio? 10 responses

- Other - (4/7, 2/3) - 6 / 60%
- Podcaster - (3/7) - 3 / 30%
- YouTube - (1/7, 1/3) - 2 / 20%

19. Where do you typically consume news through audio? 10 responses

- At home - (4/7, 1/3) - 5 / 50%
- On the commute - (2/7, 2/3) - 4 / 40%
- At work - (1/7) - 1 / 10%

20. Do you remember how many times you toggled between audio platforms yesterday? 313 responses

- Not once - 92 / 29%
- 1-2 times - 138 / 44%
- 3-5 times - 42 / 13%
- 5+ times - 12 / 4%
- Don’t remember - 29 / 9%

21. One platform vs Separated platforms? 313 responses

- One platform - 199 / 64%
- Separated - 114 / 36%

22. Location tracking, do you let apps do it? 313 responses

- Yes - 160 / 51%
- No - 153 / 49%

23. How do you feel about corporations saving your user data in order to improve your future experience using their service? 313 responses

- I’m not a fan, but I’m willing to share to get a better UX - 164 / 52%
- I don’t like it one bit, I limit the data I share as much as possible - 85 / 27%

- I’m totally fine with it - 48 / 15%
- Don’t know, don’t care - 16 / 5%

24. The last time you found a song that you liked, how did you find it? 313 responses

- Through recommendations on an audio platform - 82 / 26%
- A friend told me about this awesome song - 56 / 18%
- On the radio - 52 / 17%
- In a playlist I follow - 44 / 14%
- In a movie - 23 / 7%
- Coffee shop/bar/restaurant - 10 / 3%
- I read a music review - 9 / 3%
- I went to a concert - 6 / 2%
- At a wicked party - 4 / 1%
- In a commercial - 4 / 1%
- In a store - 3 / 1%
- Other - 20 / 6%

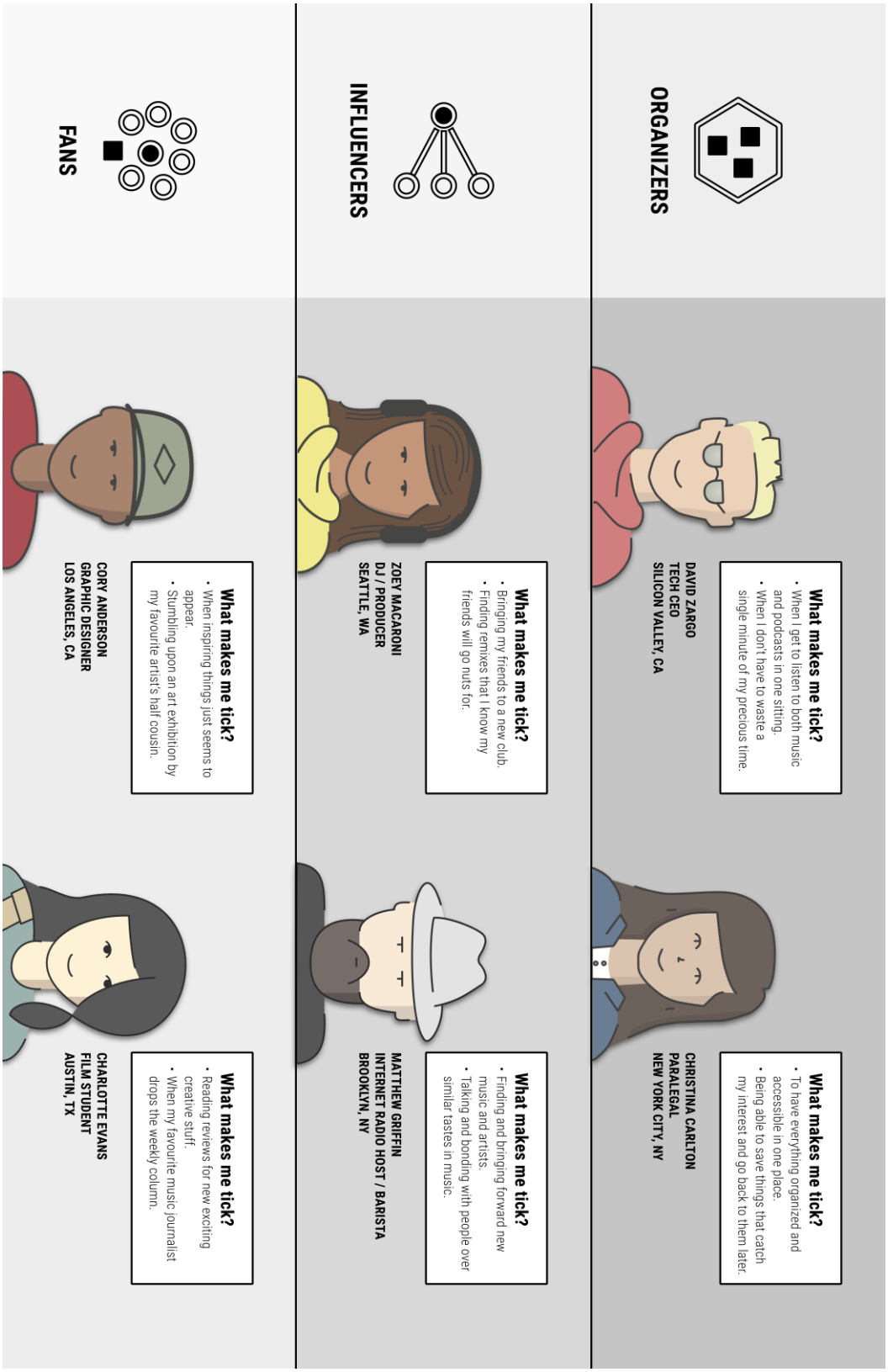
25. In the last three months, have you created a playlist on any on your platforms? 313 responses

- Yes - 207 / 66%
- No - 106 / 34%

26. Do you use Spotify’s *Discover Weekly* playlist to find new music? 313 responses

- Yeah, I’ve used it once or twice - 102 / 33%
- Yes, I use it often - 99 / 32%
- Nope, never - 81 / 26%
- Don’t know what that is - 31 / 10%

Appendix V – archetypes



Appendix VI – focus group guide

Intro - welcome, thank you, snacks
 	
who are we - same as in email, thesis work + app
 	
why are you here - inspiration, brain dump, creativity, NO RIGHT OR WRONG, NO EXPERTS IN THE ROOM. Not expecting in-depth answers
 	
today's focus - start with functionality/usability, end with ui
 	
today's session - discussion 2 and 2, present to us, write on the whiteboard. I will guide you through functionality and seb UI
	• Who are we?
	• Where are we now - why are you here?
	• Today's focus
	  ○ Functionality & Usability
	  ○ Visual attractiveness (face off - winner vs winner)
	  ○ Music, Podcasts - motivation
	• Format+timeline+handout (divided groups→ collective discussion)
	• Participants - quick intro
	  ○ Name
	  ○ What you do
	  ○ Taste in music
	  ○ Why do you care about this project?

Functionality & Usability
 	
WARM UP SESSION - positive and negative experiences with audio applications
 	
CURRENT FUNCTIONALITY - bring up your phones if you want to
 	
UTOPIC FUNCTIONALITY
 	
AGGREGATION - present our vision - imagine have all types of audio in one app - what do you think? Positive/negative experiences?
 	
DISCOVERY
favorite platform - why?
 	
context based - paint the picture: **imagine...** (we have a vision) - read and understand your credit card info + weather app. Is this creepy?
 	
re-discovery - you forget about music. How often do you want this
	• **Warmup session**
	  ○ Most important aspects of usability
	  ○ Problems/frustrations/positives
	• **Prioritize current functionality**
	• **Utopic functionality**
	• **Our vision**
	  ○ Aggregator
	  ▪ *Different types of media in the same app, e.g. music videos in spotify/tidal. Separated/connected to existing content?*
	  ○ Discovery
	  ▪ *Favourite platform? Why?*
	  ▪ *Context based recommendations*
	  ▪ *Podcasts, how? Are features such as "trending" relevant?*
	  ▪ *Save function. How detailed? Preferences/experience?*
	  ▪ *Re-discovery - Ideas/own solutions? How often? When/Where?*
	  ○ Experience
	  ▪ *Engagement with audio (Think about the spectrum)*
	  ▪ *Flat vs. deep IA*
	  ▪ *Commercials?*
	  ▪ *Soundtrack of your life? Feelings / thoughts?*

recommendation? Does it ruin the nostalgia if it happens too often? ***EXPERIENCE*** **engagement** - show spectrum (background/ white noise to vinyl) **flat vs deep ai -** Show SC vs podcaster (spectrum flat to deep) ***FACE OFF*** competition, we will pick a winner and then we will discuss	○ Data/privacy ▪ Ownership → active choices
Visual attractiveness	• **Competition** ○ play screen ○ color scheme ○ Start page ○ Discovery ○ Menu tab