

The Power of Lyrics

From user behaviour to use cases:

Understanding opportunities for digital lyrics in a home context

Master's thesis in Industrial Design Engineering

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DEPARTMENT OF INDUSTRIAL AND MATERIALS SCIENCE
DIVISION OF DESIGN AND HUMAN FACTORS

CHALMERS UNIVERSITY OF TECHNOLOGY
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Abstract

Song lyrics have long served as a significant medium for artistic expression, offering valuable insights into the beliefs, emotions, and customs of diverse societies. With the advent of digital accessibility to music through online platforms, song lyrics have become even more accessible. This thesis aims to explore users' behaviours and preferences regarding lyrics in a home context when using Spotify lyrics feature, uncovering underlying needs and objectives. The findings seek to inform enhancements to digital lyrics features and elevate the overall user experience. To ensure competitive edge and sustain user appeal, understanding the optimal utilisation of lyrics is crucial. Discerning the "when" and "how" of employing lyrics becomes pivotal in maintaining the platform's allure and staying ahead of competitors.

This was done through a series of methods that follow a classic user research design approach. Briefly, the main elements consisted of a literature study to understand the baseline conditions, followed by a recruitment process to find users for a digital diary study, followed by in-depth interviews.

Insights were synthesised and later synthesised and organised in a framework. It consists of 15 proposed use cases, each with specific user needs based on seven identified core needs. Each use case was evaluated based on four different criteria, (1) Placement on the UX pyramid, (2) How well it maps to the intended area of interest of Spotify's lyrics feature, (3) Potential to utilise the proposed capabilities of lyrics as artefacts and (4) Ability to utilise future trends in TV and Desktop. From the evaluation, the following three use cases were deemed to inhibit the greatest potential to increase the experience of digital lyrics in a home context.

Learn & improve languages. The use case involves using the lyric feature on Spotify to learn and improve language skills through music, which offers a more accessible and enjoyable approach compared to traditional language learning methods like books and films.

Sing along with others. The use case involves users singing along with artists either alone or with others using Spotify's lyrics feature, providing a "close enough" karaoke experience with live updating and synchronised lyrics. This activity is popular at social events and solo jam sessions.

Create an ambiance. Users utilise the lyrics feature to curate personalised ambiances or moods, enhancing their experience by selecting songs with specific themes or atmospheres that suit their preferences. This use case satisfies the need for personal expression and identity, as well as the need for control and organisation over one's environment.

Keywords

Digital song lyrics, Lyrics as artefact, Use cases

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1 Introduction

The following chapter aims to provide an anchor for the thesis. Briefly, how lyrics have looked throughout history, how it is represented on Spotify today and the thesis purpose.

1.1 Background

The background presents the foundation on which the thesis stands.

1.1.1 Brief history lyrics: Lyrics as an artefact

Throughout history, song lyrics have been an important form of artistic expression, providing insights into the thoughts, emotions, and culture of different societies (Brewster, 2009). The use of lyrics as an artefact can be traced back to ancient times, with examples such as the ancient Greek epic poem “The Odyssey” by Homer, which contains lyrical passages that were likely sung or recited as part of an oral tradition (Nagy, 2007).

With the rise of written language, lyrics began to be transcribed and recorded in various formats, such as manuscripts, sheet music and later phonograph/vinyl records. These records not only preserved the lyrics for future generations, but also allowed for wider dissemination of songs and increased accessibility to music. Lyrics as an artefact have played a significant role in documenting and reflecting the social, cultural, and political climate of different eras. They have been used as a form of protest, advocacy, and storytelling, capturing the essence of historical events, social movements, and personal experiences (Brewster, 2009). Lyrics have been used to express emotions, convey messages, and share stories, making them a valuable source of cultural and historical information.

In recent times, the digitization of music and the proliferation of online platforms have made song lyrics even more accessible and widely available. Lyrics websites, streaming services, and music apps now provide easy access to lyrics, allowing users to engage with the words and meanings of songs in new ways. Lyrics continue to be cherished as an artefact that adds depth and meaning to the music listening experience, providing insights into the artistic, social, and cultural aspects of songs and their creators (Tsukuda et al., 2021).

In conclusion, the history of song lyrics as an artefact is rich and diverse, spanning from ancient oral traditions to modern digital platforms. Lyrics have played a significant role in capturing and reflecting the culture, history, and emotions of different eras, and continue to be a valued aspect of music and its appreciation in today’s digital age.

1.1.2 Spotify: Music for everyone

Spotify AB, the client of the thesis, is a Swedish audio streaming and media services provider founded in 2006, with the mission:

“To unlock the potential of human creativity—by giving a million creative artists the opportunity to live off their art and billions of fans the opportunity to enjoy and be inspired by it” (Spotify - For the Record, n.d.).

Since its launch back in 2008, Spotify has grown to be one of the world’s biggest audio streaming subscription services with 456 million monthly active users (MAU), across over 180 markets. Spotify offers two different memberships, one free subscription (Free) that is supported through ads and a paid subscription (Premium), where the latter consists of 195 million MAU (Spotify AB, 2022). With Spotify, users can stream media such as music, podcasts and audiobooks on multiple devices such as smartphone, tablet, computer, TV.

The users, in addition to having instant access to the large range of streamable content, have many features at their disposal. Examples of features are among many the creation of personal playlist, liking songs, searching for specific artist or content, getting personal content recommendations and the lyrics function.

With their streaming service and seamless transition between devices, users can bring along Spotify throughout the day’s different contexts and use cases, offering them the possibility to listen to what they want to or let Spotify surprise them (Spotify AB, n.d.).

1.1.3 Spotify's lyrics feature

The real time lyrics function on Spotify is relatively new, as it was launched for Spotify's global users in 2021 after being a highly requested feature by users. Both Free and Premium users can view lyrics across different platforms, such as iOS and Android devices, Desktop, TV and gaming console. It's accessed through the "Now Playing" view or bar (Spotify - For the Record, 2021).

The lyrics are provided through a collaboration with Musixmatch. Founded in 2010, Musixmatch's business is centred around lyrics, providing features, in particular lyrics display, synchronised lyrics, lyrics search and native translation, to clients such as Spotify and Google (Musixmatch, n.d.a, n.d.b, n.d.c).

The interface is straightforward, clear aesthetics with live updating lyrics turning from either a dark grey to white, or from a lighter variant of the background colour (high in value) to white, as it syncs to the music being played. The background is a single colour that is assigned to the song in question and varies between songs. However, all colours share the semi low chromatic quality. Visual examples are presented in the following sections.

Some aspects that are characteristic of the lyrics-artefact are not represented within Spotify's lyrics feature. For instance, the feature does not differentiate between different sung parts by different singers within its visuals. It also does not indicate the different structures and elements within a typical lyric, i.e. verses, pre-chorus, chorus, bridge, breakdown etc. Outside of the actual lyrics feature, lyrics are not present on Spotify besides content-sharing on social media. See the chapter *Mobile app interface* below for example of content-sharing of lyrics.

Mobile app interface

Accessing lyrics on the mobile app is done through the "Now playing" bar. It transports users to a song's "Now playing" view where the lyrics feature is made visible at the bottom of the mobile screen. It is activated when users swipe up or click on the feature. A partial view then expands upwards and is the first lyrics view that user encounters, from which, users have the option to access the lyrics full screen view.

In the full screen view, users can navigate within the lyrics in the sense that they can scroll up and down and when clicking on a certain line, the song will automatically jump to the start of that sentence. This is not possible on the partial screen.

The mobile platform differs in that it allows two additional lyrics functionalities, lyrics sharing and reporting lyrics errors. The sharing of songs with snippets from lyrics onto the social media platforms Facebook, Instagram and WhatsApp. The sharing icon is visible on both views. The report functionality is only accessible in the full screen view, and lets users report, if parts of the lyrics are wrong, the whole lyrics are wrong or if it is not properly synchronised with the music.

Desktop app interface

Lyrics on the desktop app, like the two other interfaces, are accessed through the "Now playing" bar where users activate it by clicking on the microphone icon. This presents users with the partial view, where other functionality is still visible and possible for users to interact with, e.g. playlists.

Opposite to the mobile apps interface, users can navigate within the lyrics on the partial screen by the same procedure of clicking on a certain line and to scroll within the lyrics. In full screen view, this is not possible.

Instead in the full screen view, users can toggle off and on the lyrics and thus decide if they want to look at the cover art of the album being played, or to view lyrics. For both versions of the full screen view, the "Now playing" bar fades away within some seconds of no cursor movement.

TV app interface

Users can access the Lyrics feature on the TV app as well through the "Now playing" view on a song, where the "Lyrics button" can be found in the bottom right corner. It differs from the two previous interfaces as in that remark that it is not an icon, instead represented in the form of a button. On selection, the lyrics open in full screen. This sets the TV app further apart in that it does not offer a partial view for lyrics and that it does not provide users with the option to move within the song by highlighting certain lines. Instead the users are left with the progress bar to navigate the song. As for desktop, the "Now playing" bar fades when users do not interact with the interface.

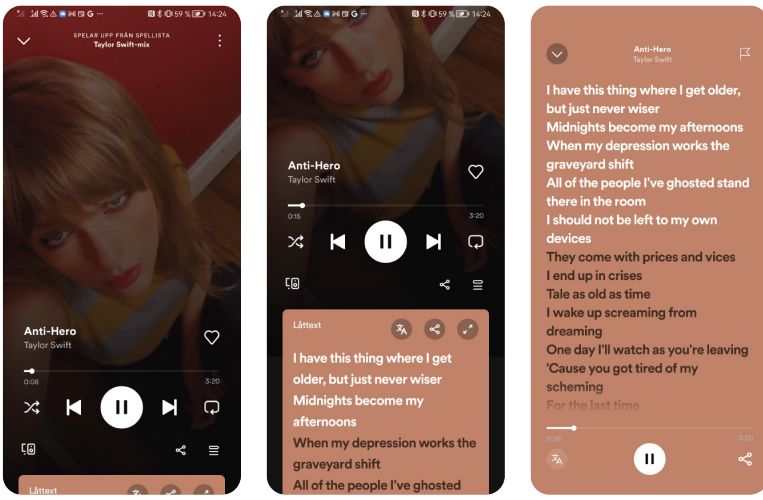


Figure 1. The user journey of the lyrics feature on the mobile app and its associated interfaces.



Figure 2. The lyrics sharing interface, in two versions with different coloured backgrounds.

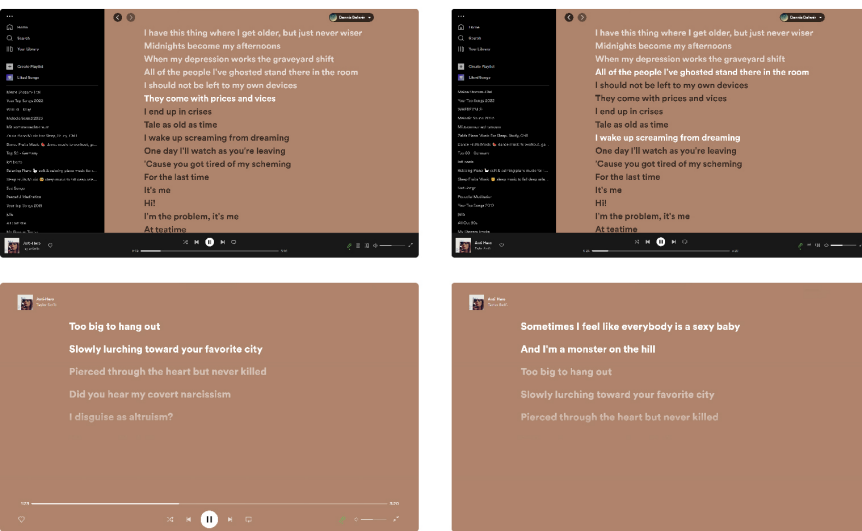


Figure 3. The user journey of the lyrics feature on the desktop app and its associated interfaces.

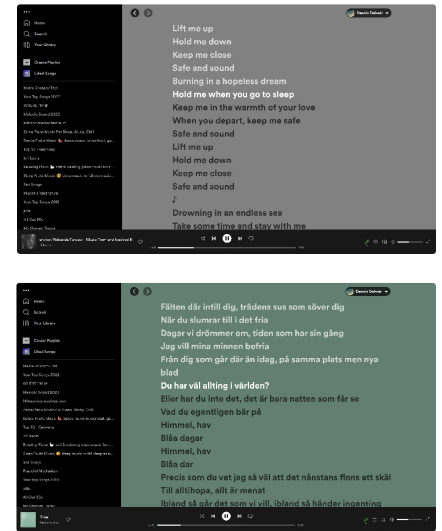


Figure 4. Two examples of additional background colour hue variants.

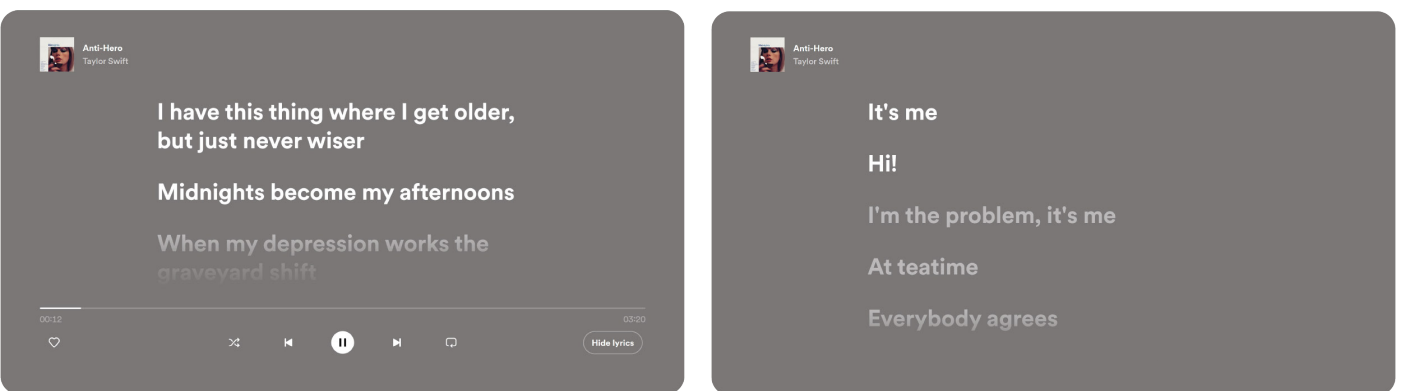


Figure 5. The user journey of the lyrics feature on the TV app and its associated interfaces.

1.2 Thesis aim & objectives

The way we interact with the lyrics are many and has changed throughout history. From looking them up on records to searching for them online. Through digitalisation, lyrics have been made increasingly accessible.

As previously mentioned, Spotify's lyrics feature is relatively new. In order to remain competitive against competitors and to maintain its attractiveness to users, it is important for Spotify to know when and how to use lyrics. The aim of the thesis is to know how to improve a lyrics feature and add value to the experience, by understanding, which are the users' behaviours when using lyrics in a home context and the needs and goals that these reveal.

The three research questions of the thesis are the following:

- Which are the users' behaviours when using lyrics in a home context and what moments, needs and goals do these reveal?
- How can the value and experience of using lyrics in the home be enhanced?
- In what ways can a lyrics feature on desktop and/ or TV App make use of these findings?

This will be achieved by using the Spotify lyrics feature and examining it by conducting user research to answer the research questions.

1.3 Project boundaries & ethical considerations

In order to prevent the project's scope from growing too large, certain initial delimitations were made.

Since the thesis focuses on the lyric feature, functionality that does not have a direct influence on the way lyrics are used or could be used, will not be covered. Lyrics to the streaming of songs will be the main focal point. Therefore, podcasts and audiobooks will not be included within this study. However, the finding and result could possibly be applicable for these areas as well.

The thesis will focus on Spotify users that do use the lyrics feature on the desktop and TV app with the aim of adding value to the already existing feature, not to reach new users. During interviews, Spotify will be used as a mediating tool on Desktop and TV. Users should have experience using the feature on these two platforms. Therefore, non users will not be considered. To stay in line within regulations in regard to participants, Spotify and Chalmers, the GDPR regulations will be followed. Users participating in the interview session will remain anonymous and will have the option to withdraw their consent of participation and usage of gathered data from the interview sessions.

Another ethical aspect is the sustainability of the thesis. The project will build on the service offered by Spotify insight and will build around a digital service. With the goal of increasing the experience that users have when engaging with the lyrics feature, this could lead to users interacting more with the product. This might lead to an increased load on the electricity grid. However, the purpose of the thesis is to add value to the experience of song lyrics, both for active and passive interaction. Whether the amount of energy used would contribute to the same is beyond the scope of this thesis. Nor is the aim to make the user interact more in terms of time with the lyrics feature. What will be researched and suggested, is not, ways to influence behaviour in a way that "manipulates" the user so that they get lost in the application timewise.

1.4 Disposition

Followed by this Introduction, the method chapter will present the used methods within the thesis. After this, the conditions for lyrics in digital circumstances, consisting of a literature review and benchmark will be presented. Thereafter, the user study is presented with its result and the analysis. This is followed by the synthesis where the main finding, representing 15 identified use cases, will be presented. Then a chapter covering the hypoties implication for future lyric experience. Finally, the discussion and conclusion will be presented.

The design process in this thesis, represented in Figure 6, started with the preliminary study, followed by the user study and ended with the analysis and synthesis.

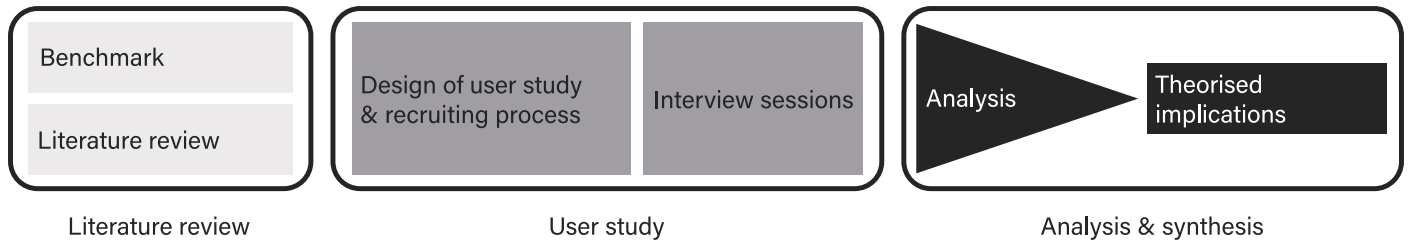


Figure 6. The design process of the thesis.

2 The theoretical framework of the thesis

Activity theory, the Kano model, and use cases are all frameworks or models used in the field of human-computer interaction (HCI) to better understand user needs and design effective systems. While they are distinct frameworks, they can be used together to gain a deeper understanding of user needs and preferences.

Activity theory

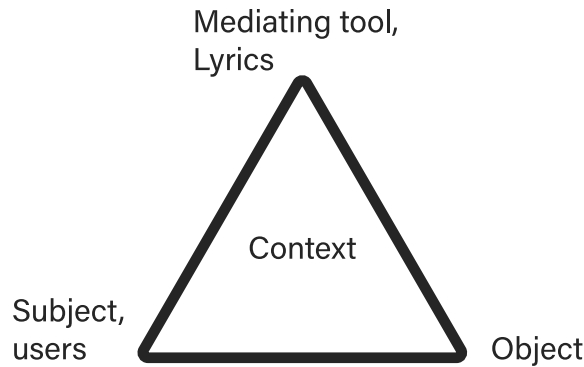


Figure 7. Activity theory, briefly applied on Spotify lyrics feature.

The application of Activity Theory in the context of interaction design, as proposed by Kaptelinin and Nardi (2006), provides a theoretical framework, seen above in Figure 7, for comprehending how a user (referred to as the subject) employs a mediating tool to accomplish a goal (referred to as the object). It is noteworthy that activities always occur within a specific context. As such, Activity Theory can serve as a valuable support in the user research process, offering valuable insights into user behaviour and needs (Kaptelinin & Nardi, 1996).

The Kano model

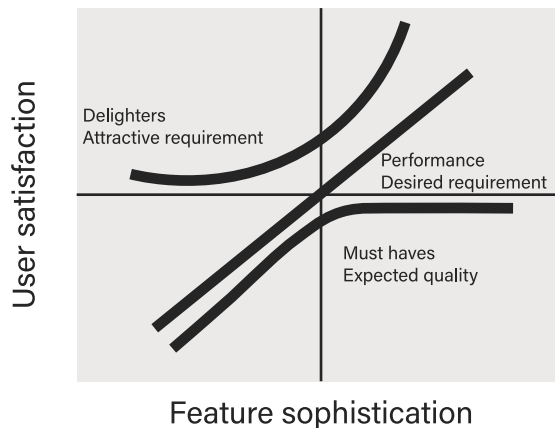


Figure 8. The Kano model with its three distinctive graphs.

The Kano model is a framework used to categorise user needs and preferences into different categories, based on the level of satisfaction they provide to the user. These categories include basic needs (which must be met for a product to be acceptable), performance needs (which are important for user satisfaction), and delighters (which provide unexpected benefits and can generate positive emotions). Over time, the lines in the graph move downwards; that is, Delighters eventually turn into Performance needs (Chen & Chuang, 2008).

Use cases

Use cases are a way of describing how a system will be used in specific scenarios or situations. They are often used to identify user needs and requirements, as well as to guide the design and development of a system (Kujala et al., 2001).

Combining the frameworks to reveal the user needs and motivators

When used together, these frameworks can provide a more nuanced understanding of users' needs and preferences.

For example, activity theory can help frame and identify the significant components of a system, here represented by Spotify's lyrics feature (mediating tool), Spotify's users (subject), the object which are to be identified, and the home context in which they occur. The Kano model can help to categorise users' needs and preferences according to their importance. Use cases can then be used to describe how the system will be used in specific scenarios, taking into account both the context and the user's needs and preferences.

Overall, by combining these frameworks, the thesis seeks to gain a deeper understanding of user needs and preferences, and lay a foundation to support the design of systems that are more effective and satisfying for users.

3 Methodology

The chapter serves as a foundation for the thesis and describes the methodological framework used to collect and analyse data. The following sections describe the different methods used.

3.1 Preliminary studies

The pre-study consisted of a literature review and a benchmark. Their executions are described in the following section.

3.1.1 Literature review

To gain an understanding of what has already been researched regarding lyrics and their use, the literature review was conducted. It consisted of two parts, (1) what happens when we interact with lyrics and (2) the ongoing development of Television (TV) and personal computers (PCs) in the home, to see how lyrics could fit into a possible future.

The literature review examined the effects of reading song lyrics and multimodal perception, synthesising and analysing existing literature on the topic. A search for relevant literature was conducted using Google Scholar and keywords such as “lyrics” “multimodal perception” “” and “emotional responses to music.” The review explored the cognitive, emotional, and aesthetic responses of users when reading song lyrics, as well as the impact of multimodal perception, involving both reading and hearing lyrics simultaneously, on users’ perception, interpretation, and engagement with music.

Similarly, the literature review on future trends and user behaviour in TV and PC usage in a home context was conducted. Keywords such as “TV usage” “PC usage” “future trends,” “user behaviour,” “home context,” “social engagement,” “smart homes,” “user interfaces,” and “AI technologies” were used for the search. The review synthesised and analysed the findings from the selected sources, providing insights into the expected future trends and user behaviour in TV and PC usage at home.

The insights gained from the literature review sought to inform the research methodology and establish a solid foundation for the subsequent analysis of the user study’s findings.

3.1.2 Benchmark

The benchmark study was conducted to examine the use of lyrics in streaming services similar to Spotify and in substitute services, defined as digital services that provide song lyrics to their users but are not a music streaming service, such as Genius. The benchmark study aimed to provide a comprehensive overview of how these platforms incorporate lyrics into their user experience, with a focus on the aesthetics, functionality, and accessibility of lyrics within the streaming services and substitute services.

To conduct the benchmark study, a review of certain identified competitors and substitute services was carried out to gather information on the current practices and trends in the use of lyrics, as well as the features and capabilities of substitute services. It was conducted by accessing these services, e.g. downloading apps, entering websites as well as reading articles, newsletters and watching YouTube videos. The benchmark study involved exploring the ways in which these platforms display lyrics, such as synchronised lyrics, karaoke-style lyrics, and static lyrics, and evaluating the usability and user-friendliness of these features.

By including substitute services in the benchmark study, this research aimed to provide a holistic comparison of different platforms that offer lyrics services to users. This allowed for a comprehensive analysis of how different platforms approach lyrics, including both mainstream streaming services and substitute services that specialise in lyrics.

The purpose of the benchmark was to contribute to the overall methodology of the research and provide insights into the similarities and differences in the implementation of lyrics in various platforms, offering a broader perspective on the topic and Spotify’s position in it.

3.2 User study

The user study was the most extensive part of this thesis. It consists of a number of individual parts coming together. This chapter describes the methods used.

3.2.1 Screener survey

Participants for the user study were recruited with the help of a screener. The survey targeted Spotify users in two markets and consisted of an in-app message on Spotify and a survey on Qualtrics (<https://www.qualtrics.com/uk/>).

Target audience

The user study targeted two markets, to get two cultural inputs regarding lyrics behaviours. The two chosen markets are the United States and the United Kingdom. The United States (together with Canada) make up 21 % of Spotify's MAU and is the second largest, next to Europe with 30 % representation (Spotify AB, 2023).

Because the two markets are both English speaking countries, the same interview script was to be used independent of participants nationality.

Participants criteria

Users had to meet the following criteria to be reached by the in-app message. They had to be of legal age, not employed by Spotify and be either Premium or Free users. Furthermore, they needed to have used the lyrics feature. To reach these users who had experience viewing lyrics on Spotify, a query was added that selected users who had used the lyrics feature on desktop at least once a week, for at least two separate weeks, in November of 2022. And for TV, at least once in November. Deliberately targeting the message to the intended user was done to limit the amount of users reached and in turn increase the chance that those who receive the message actually are lyrics viewers. In addition, the targeting worked so as not to overwhelm other users with the messages and notification, irrelevant for them, risking fatigue for other prospective research conducted by Spotify.

Lyrics are enjoyed by users of all ages, however the biggest Spotify user group consists of younger listeners, where 55 % of the users fall between the ages of 18 to 34 (Iqbal, 2023). The decision was therefore made to, even though aiming at including a mixed age group, to predominantly focus on these younger users. This in order to have a chance of identifying their behaviours and users needs.

In app message

The in-app message was triggered when users accessed the home page, upon opening the app. Inside the message there was a button "Go to survey" with a link to the survey that further screened participants according to certain criteria, such as professional survey participants and collecting potential participants' contact information. The survey consisted of eight questions, six of which were multiple choice questions, where five of these included conditions that users had to meet in order to proceed. Furthermore, the survey aimed to provide an insight into the level of detail that respondents were likely to provide through the survey's two open-ended questions. For a full overview of the questions and flow of the survey, see Appendix 2.

The in-app message was scheduled to run between 12:00 PM Coordinated Universal Time (UTC) on Friday January 13 to 12:00 PM UTC on Monday January 16, 2023. Since the participation in the user studies came with compensation, US\$ 140 and £ 126, the message was made in two versions (See Figure 9).

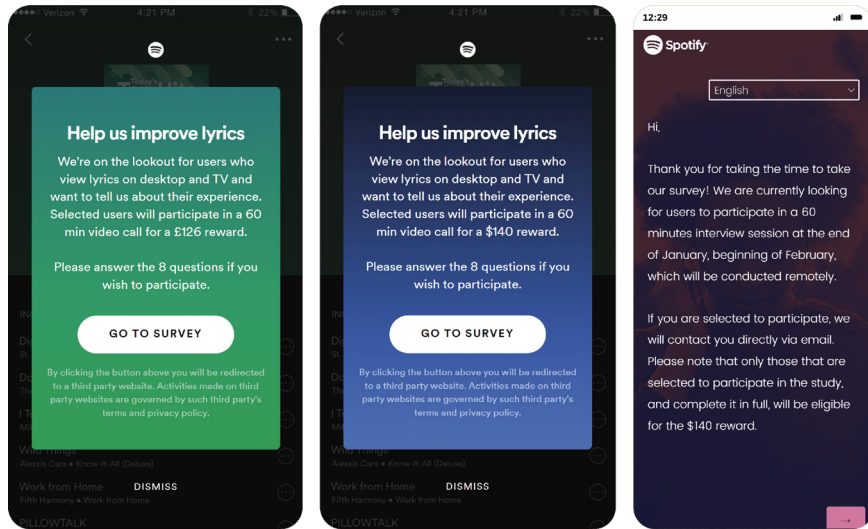


Figure 9. In-app message for the two markets and the survey's first screening question.

3.2.2 User online diary

To sensitise participants for the coming interview session a two step personal online diary was designed (See figure 10). The diary was hosted on the software Mural (<https://www.mural.co/>). Participants received a link to a personal diary within the confirmation email upon scheduling a time for the interview, where they were instructed to make notes about their lyrics usage during the week and in general, together with a collage of what lyrics meant for them. They had approximately one week to work with their diary, leading up to the interview.

Halfway through the week, participants who had not yet used the diary received a check-in message asking how the process was going and if they needed help. This was done because the diary was considered an important part of the user study. The diary had several purposes:

- It was intended to work as sensitising pre-work to get participants to start thinking actively on the role of lyrics in their lives.
- As a remote contextual inquiry and to get to know the participants due to the online nature of the user study.
- During the interviews, the diary was to be used as a mediating-object within the interviews first part (See in depth interview).

As mentioned, the diary consisted of two parts. The collage and the lyrics diary.

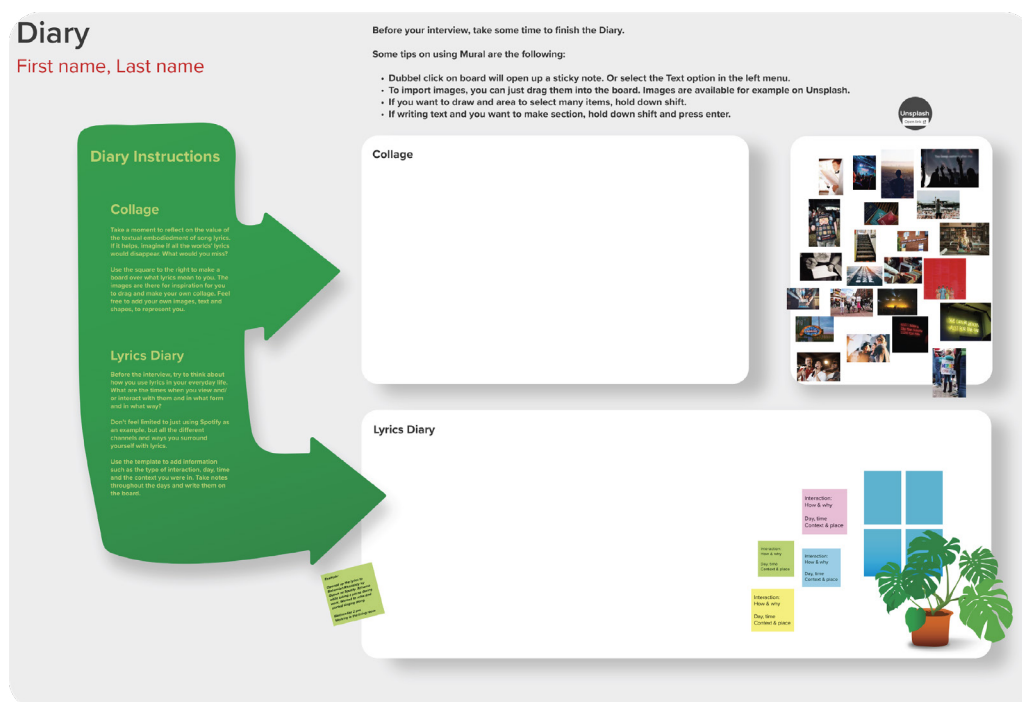


Figure 10. Online Diary Layout in Mural, with the two tasks; Collage and Lyrics Diary.

Collage

The instruction read:

“Take a moment to reflect on the value of the textual embodiment of song lyrics. If it helps, imagine if all the worlds’ lyrics would disappear. What would you miss? Use the square to the right to make a board over what lyrics mean to you. The images are there for inspiration for you to drag and make your own collage. Feel free to add your own images, text and shapes, to represent you.”

A link to the website Unsplash (<https://unsplash.com/>) was added to nudge participants to look up additional images.

Lyrics diary

The instruction read:

“Before the interview, try to think about how you use lyrics in your everyday life. What are the times when you view and/or interact with them and in what form and in what way? Don’t feel limited to just using Spotify as an example, but all the different channels and ways you surround yourself with lyrics. Use the template to add information such as the type of interaction, day, time and the context you were in. Take notes throughout the days and write them on the board.”

The template was added in order to try and have each participant’s notes as comparable as possible. Mural was chosen because it was considered a simple and intuitive enough software, even for users who may not have already been familiar with the software. Mural makes it easy for the user to add sticky notes with text and allows the user to add, drag and drop images.

3.2.3 In depth interview

The interview session consisted of a scheduled 60 min long individual online interview with each participant. The interviews were recorded and conducted through the software Dscout (<https://dscout.com/>).

The nature of the interviews were structured in depth online interviews. During the interview, the diary and participants’ Spotify on either Desktop or TV was used as mediating tools. While holding onto the script, flexibility to catch up on certain themes brought up by the participant was granted. Probing was used throughout the interviews. The interview was, except for the introduction and round up, split into three parts, namely:

- **General Lyrics Usage.** Warm up and start big. General questions to get into the mood.

The first part started off with the participant showing their diary and asked about the process and explaining the diary’s two parts. In this part, questions regarded participants’ general lyrics usage and behaviours.

- **Spotify Lyrics.** Start to narrow down. Focus on Spotify lyrics feature.

In the second part participants were instructed to engage with the feature on either the desktop app by sharing their screen, or on the TV app while having the webcam facing their TV. The feature was left playing throughout the duration of the interview. The questions were centred around the feature and the participants’ experiences of it.

- **Desktop and TV.** Focus on the big screen devices.

During the third and last interview part, the questions surrounded participants’ view and relation to their personal computer and TV. How they regarded these devices and which were their strengths and what set them apart.

Dscout was considered advantageous, since It allows for both the participant and moderator to share their screen, which was essential since the participant was asked to show both their diary and their interaction with Spotify lyrics feature on either the TV or desktop app. Furthermore, Dscout lets guests join the session, with only the moderator and other guests being made aware, while the participant is left only seeing the moderator. This was practical since stakeholders could join and help take notes and forward further questions that the moderator addressed at the end of each session. It is worth mentioning that the participants in the study were informed that visitors could look in and listen during the interview without them being aware of it. This was communicated along with other information in the email that was first sent to the participants informing them that they had been selected. For the full interview script, see Appendix 3.

3.3 Analysis & synthesis

The analysis and synthesis was the last part of the thesis. This chapter describes the methods that were used.

3.3.1 KJ analysis

The interview recordings and online diaries were analysed with the help of a KJ analysis (Kawakita, 1967) within the software Dovetail (<https://dovetail.com/>). By employing a KJ analysis, all quotes were systematically categorised into themes that were related to similar user needs. This approach allowed for the identification and organisation of common patterns and trends, providing insights into the overarching themes that emerged from the data.

First quotes and other information, such as diary collages, within the collected research material, were tagged using a multiple of tags. The tags used were constructed out of the found themes from the screener surveys open ended questions (See screener survey result, under section 5.1. Recruiting process) together with keywords from the interviewing script.

Afterward, these tags were gathered according to their tag. From there they were sorted with more detail into subgroups. Then these subgroups were further categorised into bigger groups. Notes were written for each of these bigger groups, highlighting the insight gathered. See Appendix 4 for KJ analysis.

From the analysis, 15 unique use cases with associated requirements and user needs, within three main themes, were identified. These use cases are presented in chapter 6. Digital lyrics and their 15 use cases.

3.3.2 Theorised implications

In the context of this thesis, the practice of theorising leans on the key points laid forward by Hammond (2018) as he cites Swedberg (2012):

- Theorising is distinctive to theory. Theorising is the process that leads to theory, theory is built, theorising is the process of building. Theorising focuses on discovery rather than justification; justifying comes later.
- Theorising is a personal undertaking, which draws on one's own resources and on one's own ideas and experiences.
- Theorising can take many different forms but often calls for a different way of thinking which is more intuitive, less procedural, than other steps in the research process.
- Observation is critical to theorising by which Swedberg means concentrating on a phenomenon, 'staying with it; and trying to understand it'. Observation can draw on many different resources, but theorising is not confined by the data.

Building on this, this part is meant to theorise how to add increased value to the user experience of viewing lyrics through a digital lyrics feature on TV and, or PC in a home context, by looking at the implications that the finding could have. The theorising was built on the knowledge gathered from the preliminary study, user study and analysis part.

Because this part is speculative and to keep it relevant, the three use cases that could be argued to have the best potential will be presented. In selecting these three, a matrix was conducted, rating each use case separately on a scale from one to five, one being the least likely, on four criteria. The following four criteria and their relevance are presented below.

Placement on the UX pyramid

The UX Pyramid is a framework for categorising the level of experience an interaction provides the user with. It is based on Maslow's hierarchy of need, where the base of the UX Pyramid lays the base with fundamentals like the functionality of an interaction and the higher on the pyramid, the more enriching the user experience becomes (Ralph, n.d.). The lower levels of the Pyramid address the functional aspects of the user's interaction with the system, emphasising their ability to accomplish specific tasks and achieve desired outcomes. On the other hand, the top levels shift the focus towards the user's overall experience while using the product or service. This

includes considerations such as enjoyment, satisfaction, and whether the system enhances their quality of life.

Within the thesis, the Ux Pyramid is used to help categorise the use cases, to determine the inherent potential of each use case to deliver to the user a meaningful interaction. Some of the use cases, presented in chapter 6, are predominantly oriented towards enabling experiences, while others facilitate useful tools. This is not to say that the use cases that work more as tools can't present the user with a meaningful experience. However, to weigh the potential of the use cases against each other, the UX pyramid proved to be a suitable framework.

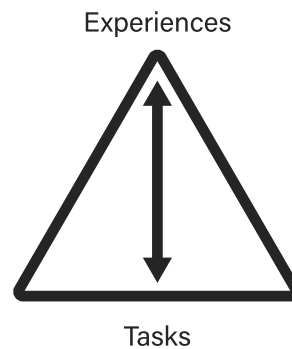


Figure 11. The UX Pyramid.

How well it maps to the intended area of interest of Spotify's lyrics feature

The added value should be realised in the interplay between a digital lyrics feature, the TV and desktop devices, and a home context. This second criterion refers to how well use cases fit into the interaction these. Although the use cases are not limited to one context, some are better suited, or more frequently used, in situations where the user is out and about while others perform best in a fixed location.

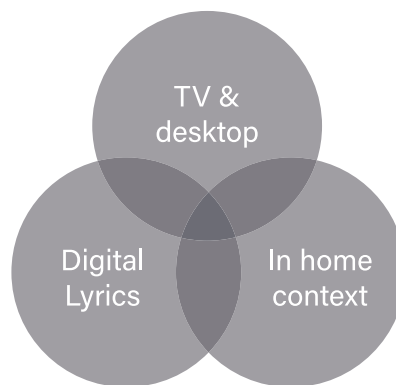


Figure 12. The intended area of interest for the Spotify lyrics feature.

Potential to utilise the proposed capabilities of lyrics as artefacts

The third criterion refers to how well the use cases can make use of the potential of lyrics as an artefact. Section 4.1.1 presented effects that reading song lyrics can have on users, such as enhancing emotional engagement, cognitive processing, and enjoyment. These are effects that use cases can utilise to different extent, in order to enhance the user experience and reach the goal.

Ability to utilise future trends in TV and desktop

The fourth criterion refers to how future trends in TV and PC play into the user experience. Trends mentioned in the section 4.1.2 Future Trends and User Behavior in TV and Personal Computer Usage in a Home Context. Such as streaming services, personalization, recommendation, interactivity, social engagement, computing power, mobility, user interfaces and integration of AI technologies.

4 Conditions for lyrics under digital circumstances

Establishing a foundational understanding on digital song lyrics and its prerequisites is important to be able to put Spotify's lyrics feature in perspective. The insights made in this phase of the thesis are presented below.

4.1 Academic viewpoint

As mentioned the review was divided in two parts. The first focused on lyrics and the second part looked at future trends for TV and PCs.

4.1.1 Effects of reading song lyrics and multimodal perception

Song lyrics are a form of written text that can evoke powerful emotional and cognitive responses in individuals. This literature review aims to provide an overview of the existing research on the effects of reading song lyrics and multimodal perception, with a focus on the impact on users.

Effects of reading song lyrics

Reading song lyrics has been found to have several effects on users. First, it can enhance emotional engagement and affect responses. When individuals read song lyrics, they are exposed to the poetic language, metaphors, and expressions used by the songwriter, which can elicit emotional responses and facilitate emotional connection with the music (Tsukuda et al., 2021). Lyrics that convey meaningful and relatable messages can evoke nostalgia, joy, sadness, or other emotions, leading to a heightened emotional experience for the reader. However, Ransom (2015) argues that lyrics, when relating to wellbeing only has a demonstrated effect of making people feel sad emotions more intensely by listening to "sad" music with "sad" lyrics, but not to move from sadness to excitement by listening to "happy" music with "happy" lyrics, although people are perceiving that this is the case.

Secondly, reading song lyrics can influence cognitive processing and comprehension. Lyrics often contain complex wordplay, figurative language, and cultural references, which require cognitive effort for interpretation and understanding. Research has shown that reading song lyrics can enhance language skills, such as vocabulary, syntax, and reading comprehension, as individuals engage with the text in a meaningful context (Tsukuda et al., 2021). Moreover, the interplay between the lyrics and the music can create a holistic experience, where the meaning of the lyrics is integrated with the melody, rhythm, and tone of the music, enhancing the overall comprehension and interpretation of the song (Ransom, 2015).

Effects of multimodal perception

Multimodal perception, which involves reading song lyrics while simultaneously listening to the song, has been found to have unique effects on users. The combination of visual (reading) and auditory (hearing) modalities can create a synergistic effect, enhancing the overall perception and experience of the song (Nanay, 2018).

Research has shown that multimodal perception of song lyrics can lead to increased emotional engagement, cognitive processing, and enjoyment compared to solely listening or reading the lyrics (Stratton & Zalanowski, 1994). The simultaneous engagement of multiple senses can create a more immersive experience, where the lyrics and music complement and reinforce each other, leading to a heightened emotional and cognitive response. The synchronisation of the lyrics with the music can also enhance the perception of the rhythm, melody, and tone of the song, leading to a deeper understanding and appreciation of the music (Azuaje et al., 2021).

4.1.2 Future trends and user behavior in TV and personal computer usage in a home context

TV and PCs have been integral parts of home entertainment for decades. However, with the rapid advancement of technology and changing consumer behaviours, the landscape of TV and PC usage in a home context has been evolving. This literature review aims to explore the current state of research on the future trends and user behaviour related to TV and PC usage in a home context.

TV usage in a home context

Streaming services have emerged as dominant players in the TV landscape, with on-demand streaming services gaining popularity over traditional cable or satellite TV. Research indicates that consumers are increasingly opting for streaming services due to their convenience, affordability, and the ability to access a wide range of content on-demand (Walsh & Singh, 2022). This trend is expected to continue in the future, with streaming services likely to drive the production of more original content and result in increased competition among platforms (Alam et al., 2021).

Personalization and recommendation technologies are also expected to play a significant role in the future of TV (Alam et al., 2021). Machine learning algorithms can analyse user data, viewing preferences, behaviour, and demographics to provide more personalised content recommendations (Smyth & Cotter, 2000). This can result in more curated and tailored TV viewing experiences, leading to higher user satisfaction and engagement.

Furthermore, the future of TV is likely to be characterised by more interactive and immersive experiences. Virtual and augmented reality technologies have the potential to transform TV into a more participatory and engaging medium (Vatavu et al., 2020). For example, interactive storytelling, virtual reality TV shows, augmented reality overlays, and gamification of TV content could provide users with more interactive and immersive viewing experiences.

Social viewing and engagement are also expected to gain traction in the future of TV. Streaming services may incorporate social features that allow users to watch shows and movies together, share recommendations, and interact with fellow viewers in real-time (Bründl et al., 2017). Social media integration and user-generated content related to TV shows and movies could also play a significant role in driving engagement and conversation among viewers.

PC usage in a home context

The usage of PCs in a home context is also expected to undergo significant changes in the future. Computing power and versatility are expected to increase, with PCs becoming more powerful and capable of handling demanding tasks such as gaming, content creation, and virtual reality (Lally, 2020). This could result in more flexibility and productivity for users, as PCs become essential tools for work, entertainment, and creativity.

User interfaces and experiences on PCs are also likely to evolve in the future. Advancements in technologies such as touchscreens, voice recognition, and facial recognition are expected to result in more intuitive and interactive ways of interacting with PCs, making them more user-friendly and accessible to a wider range of users (Iannessi et al., 2018; Bodker, 2021).

Integration of artificial intelligence (AI) is also expected to play a significant role in the future of PCs (Xu, 2019). AI-powered virtual assistants, predictive analytics, and automation technologies could enhance user experiences by providing personalised recommendations, automating routine tasks, and adapting to user preferences and behaviour. This could result in more seamless and efficient computing experiences in a home context.

Future trends for the two devices

The future trends and user behaviour related to TV and PC usage in a home context are likely to be shaped by various factors, including advancements in technology, changing consumer preferences, and market dynamics. Streaming services are expected to continue dominating the TV landscape, with increased personalization, recommendation, interactivity, and social engagement (Chorianopoulos & Lekakos, 2008). PCs are expected to become more powerful, versatile, and mobile, with improved user interfaces, cybersecurity, and integration of AI technologies.

These trends are likely to have significant implications for various stakeholders, including consumers, content providers, hardware manufacturers, software developers, and advertisers. Consumers are expected to benefit from more personalised, immersive, and social TV experiences (Vatavu et al., 2020), as well as more powerful, versatile, and user-friendly PCs (Bodker, 2021). Content providers may need to adapt their content strategies to cater to the changing landscape of streaming services and interactive TV experiences. Hardware manufacturers and software developers may need to invest in research and development to keep up with the evolving technologies and consumer demands. Advertisers may need to explore new advertising models and approaches to engage users in the changing TV and PC landscape.

However, there are also potential challenges and concerns related to the future trends and user behaviour in TV and PC usage. These may include issues related to data privacy, cybersecurity, content curation, ethical use of AI, and potential negative impacts on traditional TV broadcasting and content distribution models (Xu, 2019). Ensuring user privacy, data security, and ethical use of AI technologies will be crucial to building trust and maintaining user engagement in the future TV and PC landscape.

4.2 The current digital lyrics landscape

Users have access to digital song lyrics in different formats. One way is through music streaming services, like Spotify, Apple Music and Amazon Music among others. A related area is the video streaming service YouTube, where they alongside their regular channel offer YouTube music, dedicating to music and music videos. A third way is through websites and services that mainly focus on song lyrics.

Streaming services similar to Spotify

The benchmark looked at how streaming services provide their users with lyrics in terms of its visual appearance, functionality and accessibility. What became clear is how similar everyone's lyrics were in all three aspects. The reason for this could be that many of them, including Spotify, collaborate with Musixmatch which offers the lyrics service. The Musixmatch service offers the following functionality to its customers: Lyrics display, Synchronised lyrics, Lyrics search and Native translations (Musixmatch, n.d.c). Thanks to these functionalities, the lyrics feature of music streaming services manages to look and work in a similar way.

Things that to a certain degree sets them apart are the visual identity and how functionality is communicated through the visuals. For example, Spotify uses different colour fonts to distinguish what has been sung, what is currently being sung, and what has not yet been sung. In their mobile app, Apple Music instead fades the text that is not sung. This results in different degrees of totality that can be deduced from the song lyrics, which ultimately affects users' accessibility to the lyrics. Another thing is the background and text placement, Spotify has a solid background colour inspired by the cover art, Apple Music has a background with a gradient, possibly also influenced by the cover art, while Amazon Music has a faded background with a darkened image overlay.

One functionality that currently sets Apple music apart, is the ability for the users to lower the volume of the vocal track, letting them sing over the artist. Together with lyrics displayed, this offers the users a karaoke-like experience.

Other services providing lyrics

YouTube was categorised as a substitute service despite being a streaming service, as its content is primarily videos, although music is included. YouTube stands out by offering a variety of ways to access lyrics. Although, it is not possible for the user to say in advance how, or even if, lyrics are available. The way YouTube works, grants users the ability to themselves add lyrics to content. Four main formats in which lyrics can be accessed were identified (See figure 13). (1) Lyrics can be accessed through Youtube's closed captions feature. Users have ways of adding lyrics by themselves, (2) by having them shown as an included part of a video, or (3) including them in the description of a video. (4) Lyrics can also be added in the form of a comment to a video.

Although this allows users creative ways to access lyrics, it does not provide consistency in all the three aspects of aesthetics, functionality, and accessibility of lyrics.

Websites and services with lyrics as their main service, such as Genius and SongMeanings, provide their users with lyrics alongside a forum for users to discuss lyrics among each other. Genius gives further insight by providing a background to the lyrics. While not lyrics in a dynamic way as with the streaming services, it presents them with a proper song lyrics structure, such as Vers, Pre-Chorus and Chorus. SongMeanings provides users with a forum to discuss the meaning and interpretations of lyrics.

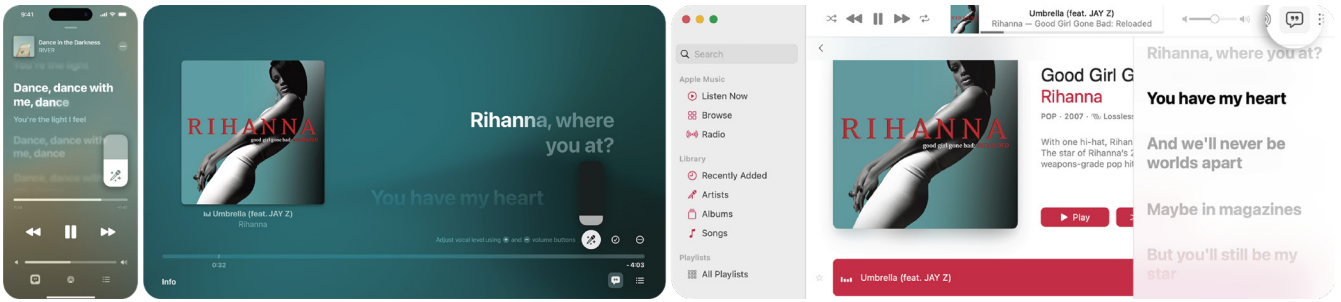


Figure 13. Apple music's lyrics feature on, from left to right, smartphone, TV and Desktop.

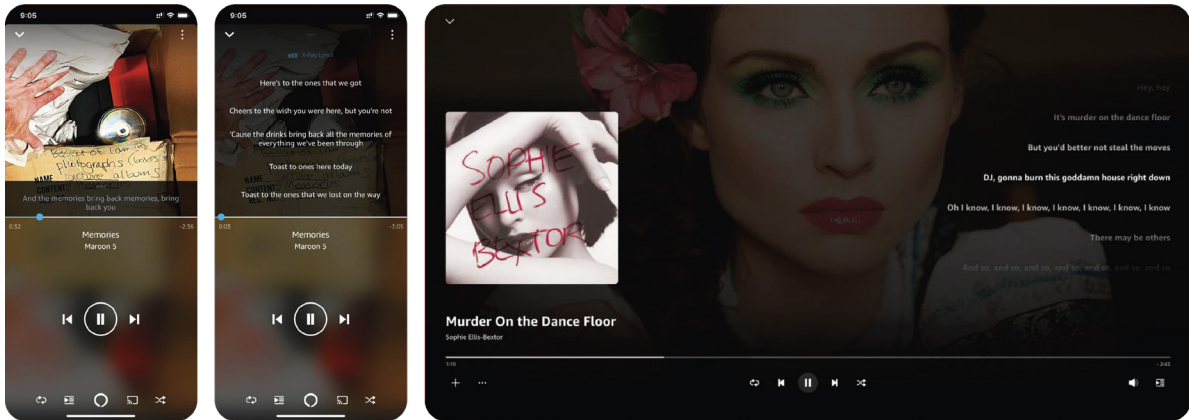


Figure 14. Amazon lyrics feature on, from left to right, smartphone and Desktop.

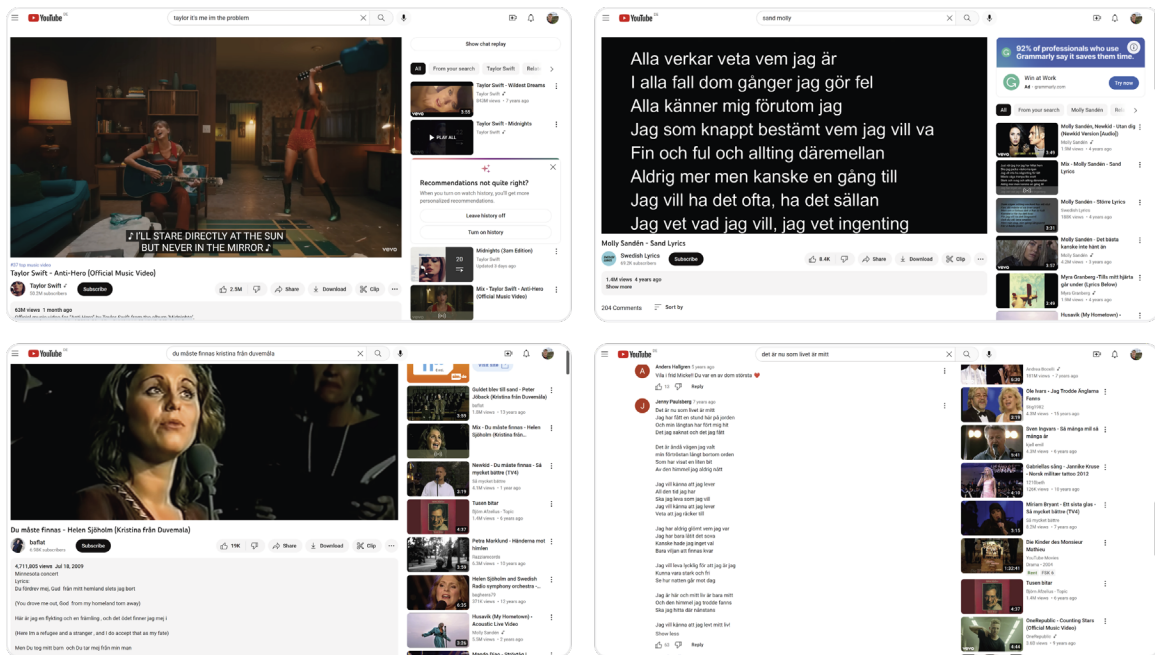


Figure 15. Four optional ways that YouTube presents song lyrics to its users.

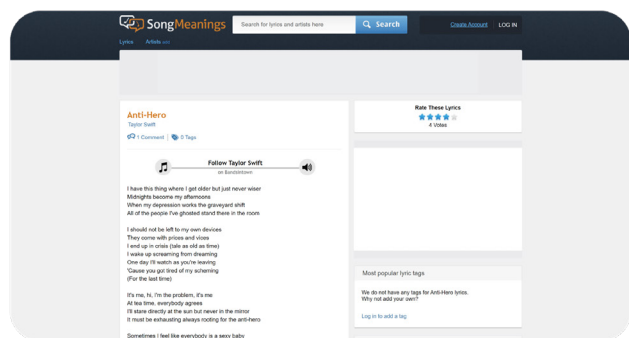
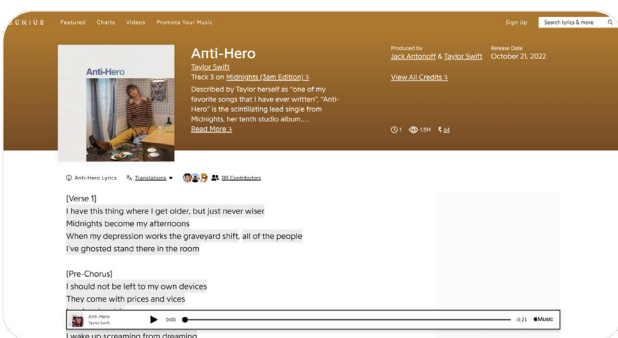


Figure 16. Two different websites, Genius on the left and SongMenings on the right, which offer their users discussion forums on song lyrics.

4.3 Implications for the thesis

To conclude, streaming services currently provide lyrics in a similar fashion where the visuals, functionality and accessibility is much the same. However, many of them use the Musixmatch service. Then there is YouTube where users can access and themselves add lyrics in different formats, which however does not provide users with a guarantee for lyrics and in which form it is presented. Then there are the lyrics webpages dedicated to lyrics, presenting them in a formal structure where users can discuss their meanings. For a full review of the benchmark study, see Appendix 1. Meanwhile, the literature suggests that reading song lyrics and multimodal perception can have significant effects on users, enhancing emotional engagement, cognitive processing, and enjoyment. Understanding the effects of reading song lyrics and multimodal perception can contribute to the knowledge of the cognitive, emotional, and aesthetic aspects of music appreciation.

Looking at the future trends and user behaviour related to TV and PC usage in a home context, these are expected to be shaped by advancements in technology and changing consumer preferences. Streaming services, personalization, recommendation, interactivity, social engagement, computing power, mobility, user interfaces and integration of AI technologies are expected to play significant roles in shaping the future of TV and PC usage in a home context. These trends are likely to have implications for various stakeholders and may present opportunities and challenges that need to be addressed to ensure a positive user experience and sustainable growth of the TV and PC markets in the future.

Considering the implications of these findings and the opportunities presented, it is clear that the future of lyrics has great potential. Here, Spotify has an opportunity to differentiate itself from competitors through continued work on the lyrics feature. To provide the best possible conditions for this, it is important to see how users engage with, perceive and value the product today, to see future opportunities and where the greatest potential lies.

5 User study

The user study was the most comprehensive work within the thesis. The purpose was to identify the ways users are interacting with a lyrics feature, the behaviours and motivators these reveal.

5.1 Recruiting process

As mentioned, the screener survey was scheduled to run from Friday January 13 to Monday January 16. However, due to a high volume of responses, the message was closed in the United States on Saturday the 14th and in the United Kingdom on Sunday the 15th.

By the time it was closed, the campaign had reached a total of 53,645 users. 31,619 in the United States, 3,090 of whom opened the link to the survey. In the United Kingdom, the figure was 22,026, 2,046 of whom used the link to click through to the survey. In the end 683 respondents made it through the survey and affirmed that they would like to take part in the user study.

5.1.1 Screening for potential participants

The survey was effective in filtering out people who did not fit the selected user criteria. It also provided an indication of users' perceived level of experience and behaviour related to lyrics use. For the full survey report, see appendix "5". To question no 5, seen in Figure 15, out of the 1181 that reached and replied, nearly 75 % stated that they were very familiar with the feature, whereas 118 representing 10 %, were screened out by stating they were not familiar with the feature.

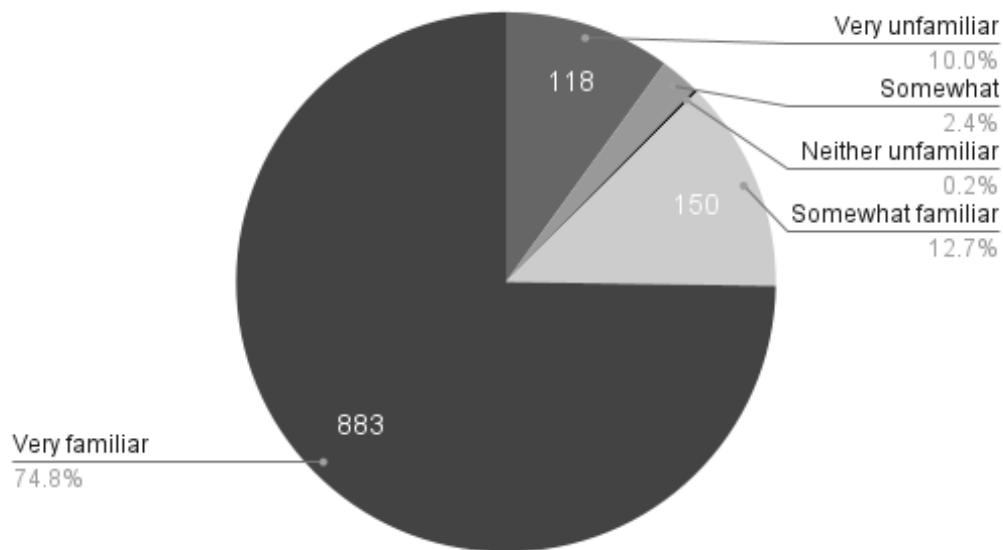


Figure 17. Question no 5 "How familiar or unfamiliar are you with Spotify's lyrics feature?" Number of respondents was 1181.

Table 1. List of user study participants

ID	Age	CTRY	Indicated device usage	Answer to question no 8
P1	22	UK	Mobile, Desktop & TV	I'm on the autistic spectrum and I can't watch things without subtitles/lyrics. I just find comfort in seeing the words.
P2	27	UK	Desktop & TV	When I'm home alone I like to participate in what I refer to as a 'jam sesh' where I play some of my favourite songs/albums on the tv and sing my heart out for an hour or two, pretending to perform to a live audience. Just recently my girlfriend joined one of my jam seshes. It was a good experience. We use the lyrics to help us if we don't know the words well.
P3	23	US	Mobile, Desktop & TV	Lyrics fit into my daily life because knowing what words are used in the songs I listen to are important. I have diverse taste of music, singing along whether it's by myself or my wife makes music more enjoyable. We love going to concerts, this year I'm going to two concerts. Reading the lyrics is helping me be more prepared for concerts. I love going to the gym and listening to music with known lyrics allows a different experience. I love how spotify has the live lyrics that follow the song throughout.
P4	19	US	Mobile, Desktop & TV	As a college student, I enjoy using Spotify's lyrics feature on my TV. I typically leave Spotify on in the background while I study or spend time with my friends. Several times, my friends and I have started laughing because the lyrics say something completely different than we thought.
P5	20	UK	Mobile, Desktop & TV	I find it difficult to follow along with music, seeing lyrics on screen greatly helps with this and ups my engagement with the music and platform.
P6	40	US	Mobile, Desktop & TV	I've been obsessed with music and lyricality since I was a child. My wife is the same but she is going deaf so we use the lyrics to help her enjoy the music more.
P7	23	UK	Mobile, Desktop & TV	Whenever I focus on listening to an album, new or old, I like to have the lyrics up to help understand what is being communicated by the artist more clearly. It's also a useful feature for singing along to songs or seeing if you know the lyrics to old songs correctly. When listening to songs on shuffle I often flip over to read the lyrics too.
P8	25	UK	Mobile, Desktop & TV	While working through something creative Lyrics power me forward. Having lyrics open is an automatic move for me.
P9	31	US	Mobile, Desktop & TV	lyrics help me sing along with my music which adds another layer of immersion. I listen to music almost all day and being able to sing along is important. I will sing the lyrics outloud to friends or family and even quote lyrics when talking to others, also when I'm unsure what language they are speaking or what words they are pronouncing it helps me differentiate.
P10	21	UK	Mobile, Desktop & TV	As someone who listens to music in different languages I like to know what I'm listening to so lyrics are very important to me. Nothing is better than humming and singing along to your favourite songs and having a lyrics viewer makes it way more efficient for me (which is why I use Spotify and Youtube the most).

5.2 The interview sessions

The purpose of the interviews session was to gain qualitative insights on users behaviour relating to lyrics usage. The interviews worked well in that gave insight into the motives to why people use lyrics and how they use them.

The first part of the interview sessions where participants were asked to present their work with the online diary helped establish the emotional connection people have to lyrics. Writing their activities down and creating the collage, had helped them being made aware of the way they experience lyrics and the importance it holds in their lives. Although the diaries were meant to have a general take on lyrics, a lot of the examples were connected to Spotify.

The use of having the users interact with Spotify's lyrics feature within the second and third part of the interview revealed certain interaction, as well as encouraged users to show other content on their computer, e.g. websites for lyrics and translations and background visualisations based on the beat of music. It provided insight into the participants' understanding, experience and perception of what Spotify's lyrics feature is. This revealed some pain points related to the feature.

The participants meant that they enjoy the time they spend with lyrics, that it's a enjoyed experience they prefer to do at home. They referred to being "out and about", one does not have time or feel the need to devote time to lyrics. With the lyrics feature, then mainly on the smartphone. The perception, through self-assessment, is that they spend significantly more time in the lyric feature at home. By longer time, this means staying in the feature for at a minimum an entire song, to several songs, or an album.

TV and PC are considered the most suitable for this purpose. In particular, PC was highlighted as advantageous as participants felt that the Desktop app offered "all the functionality" of Spotify. When it comes to the specific features the two devices provide, the PC is seen as a private, personal device, an "extension of the mind". Whereas the TV is seen as a social facilitator and part of the home decor.

5.3 Mapping user behaviour and user needs

The analysis looked at two areas. The first was to identify users' behaviours and their associated needs and goals. Alongside that, how the product in question manages to live up to users' expectations in terms of experience.

Satisfaction with current product

The majority of the identified pain points referred to the lyrics feature functionality's consistency and sophistication, e.g. that lyrics were provided for each song or that the lyrics did not sync properly. This could cause some frustration but participants said they were understanding that this could sometimes be the case. Furthermore, there were some instances in which the participants would pause their interaction with the lyrics feature to turn elsewhere, e.g. to websites for translations of lyrics or further explanation about a song's meaning.

However, all things considered, users are overall satisfied with the experience they are currently being provided. Where functionality fails, such as when a song is not synchronised correctly or when it is not provided, users show that they accept that this may occasionally occur.

All the functionalities that currently make up the lyrics feature can be characterised as Desired Requirements, as they are expected and in their presence contribute to provide users with the current valued experience. This is illustrated in Figure 19 below, where Spotify's functionality for the lyrics feature is visualised in the Kano model with the Spotify logo representing its average functionality representation in the upper right quadrant.

Although none of the functionality was considered attractive requirements, some participants expressed wishes for functionality, currently not offered, that could be considered delighters. These related to customisation options of the visuals, modularity of the feature and its components within the Spotify overall interface and some further functionality how the lyrics are presented.

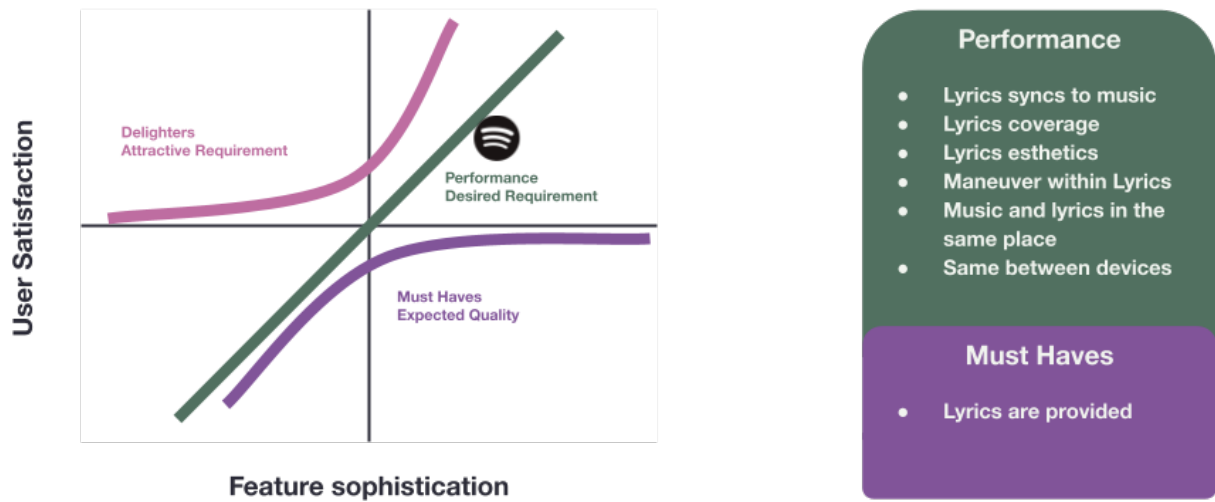


Figure 21. Representation of users' satisfaction towards Spotify's lyrics feature, visualised in the Kano model.

User needs

The KJ analysis helped to distinguish and group the users' behaviour, motivators and goals of using song lyrics. Through this work, some distinctive uses began to emerge, categorised by different user needs. In a next step to further make the user needs manageable, these were sorted into families, here called core needs. These core needs constitute umbrellas under which specific user needs can be gathered.

Within the analysis the following seven core needs were defined.

- **Convenience.** Users need to easily access lyrics without interrupting their music listening experience.
- **Control and organisation.** Users need to be able to control when and how lyrics appear, as well as organise them for personal use.
- **Connection.** Users need to feel connected to the artist and their music through the lyrics.
- **Experience and feelings.** Users need to have an emotional connection to the music through the lyrics and relating to them.
- **Identity and expression.** Users need to express their identity and personality through sharing and discussing lyrics.
- **Personal development.** Users need to learn and expand their knowledge about different cultures, languages, and ideas through lyrics.
- **Tuning in and out.** Users need to be able to easily tune in or out of lyrics depending on their mood or activity.

Later, specific use cases were constructed, based on the insight gathered from the analysis. These are presented in the next chapter together with an overview. The use cases were further sorted into three family groups, based on the user need having the greatest influence on the use case. These are shown in the figure below.

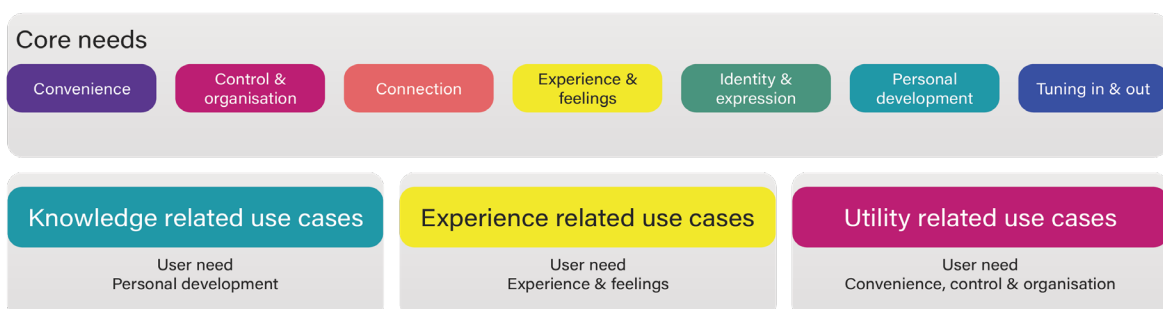


Figure 22. The core needs and the three user case families.

6 Digital lyrics and their 15 use cases

These identified use cases illustrate the various objectives and motivations that users currently have when interacting with digital lyrics through Spotify's lyrics feature in conjunction with other texting tools.

Below, the synthesised overview consisting of the 15 individual use cases is presented, together with their mapped user needs and interaction patterns, organised in the three established categorising themes. The overview should then be read that each use case consists of its own column. The leftmost column first contains the group Spotify "Interaction" and "Device" which represent the actual interaction and the interface through which it takes place. This is followed by the seven identified "Core Needs". This column's hypothesised detailed adaptations for each use case, which they are considered to affect, are presented in a horizontal movement for the respective use cases.

Then follows a section with a deeper description of each use case together with the hypothesised user case specific user needs. All quotes come from the interview sessions and are presented as they were said. Thus, no grammatical changes have been made to them, only that some parts have been omitted that did not add anything to the substance of the quote.

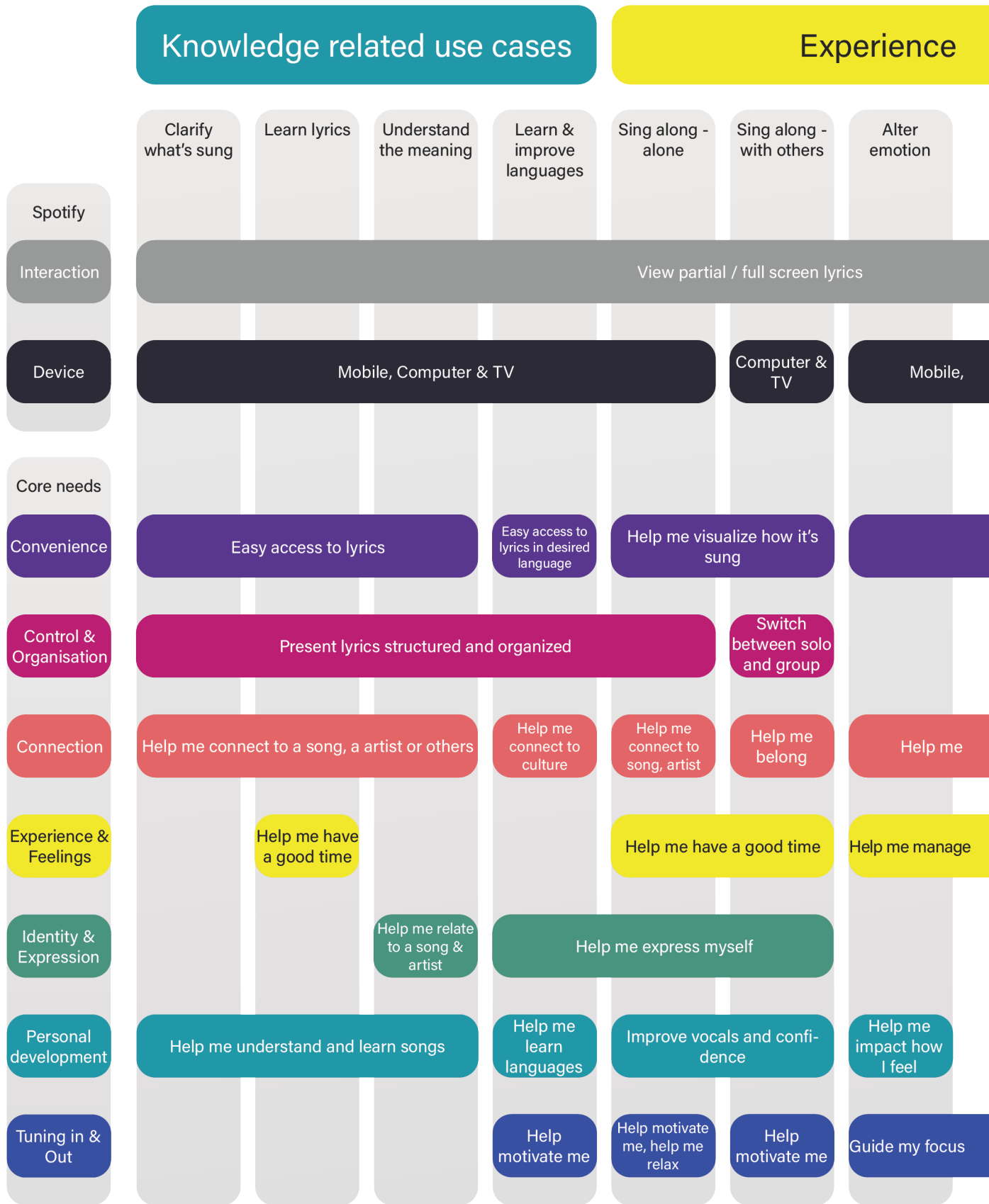
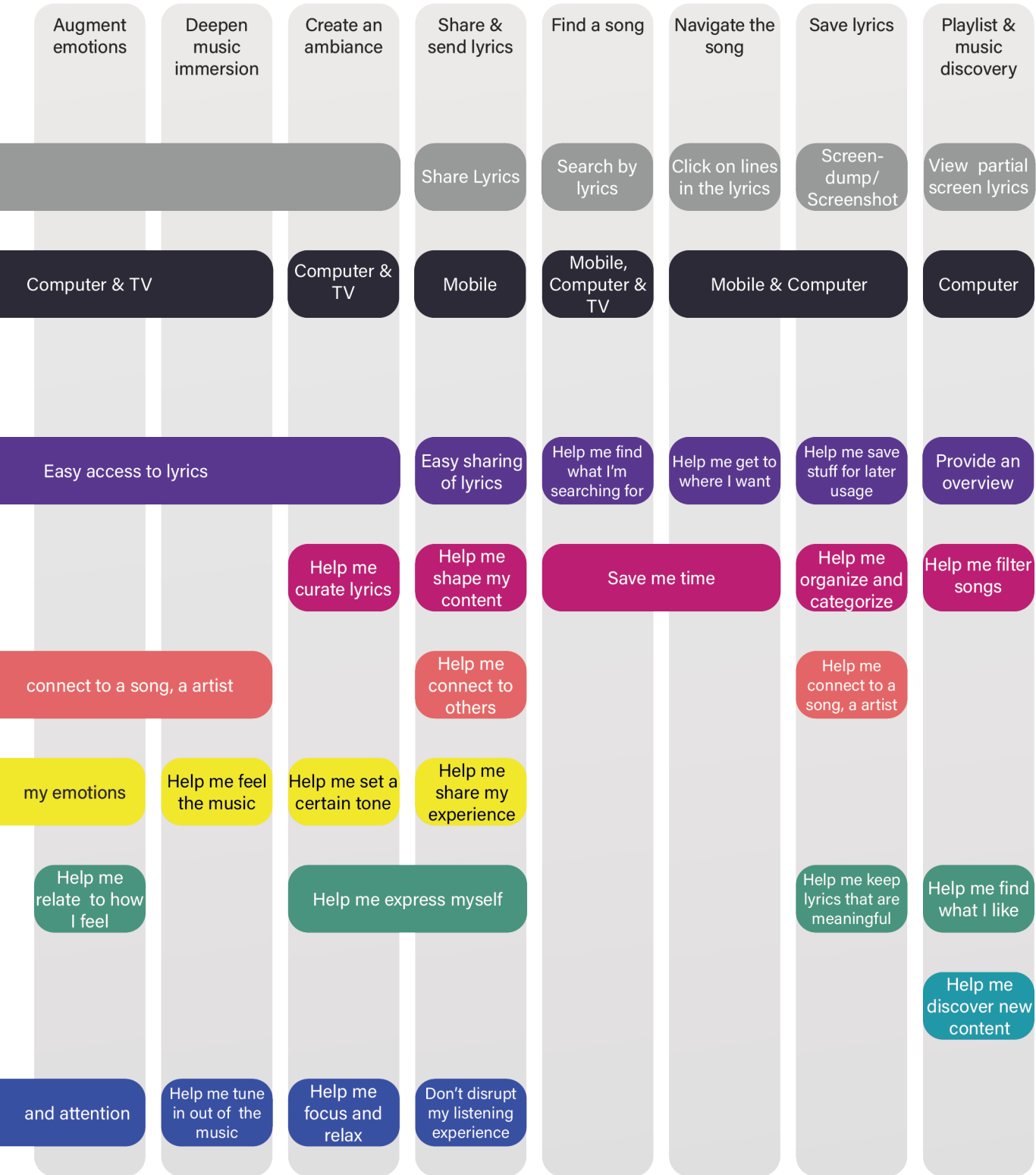


Figure 23. Use case overview.

related use cases

Utility related use cases



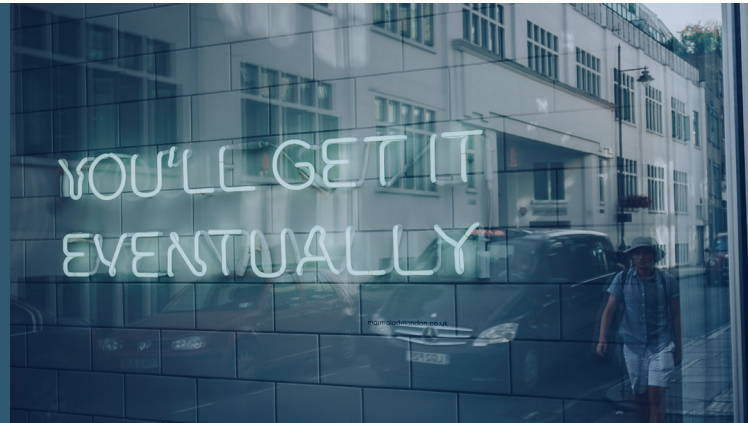
6.1 Knowledge related use cases

The following four use cases are closely linked to the core need for personal development.

Clarify what's sung

"If this singer has an odd vocals for example, it's often hard to understand what they're actually trying to say and so often I'll look up the lyrics [...] Often it's quite interesting because you can often find that you'd be singing a song wrong your entire life."

- P7



Use case overview

One of the most commonly mentioned reasons why people use the lyrics feature, during the interviews and screener survey, is to clarify what the lyrics actually are. It could be that an artist's pronunciation is difficult to decipher or that the song is fast and the words blend together. This can make it difficult to recognise the lyrics of the song and can lead to people interpreting what is sung, only to find out that they've been singing the lyrics wrong. Clarifying the lyrics helps users to understand what the exact lyrics of the song actually are.

This use case takes place all throughout the day and can be triggered by various instances, like friends discussing a song or one self hearing it on the radio. It can happen at home, when one is out and about or in a bar with friends. This is done on all devices and having both the music and the lyrics in the same place makes it easy for the users to access. However, since it's a fairly quick interaction, to clarify the lyrics, this use case doesn't last that long and is likely mostly performed on the mobile.

Associated user needs hypothesis

Easy access to lyrics

Present lyrics structured and organized

Help me connect to a song, a artist or others

Help me understand and learn songs

Learn lyrics

"I'm a person that loves listening and reading and knowing all the lyrics to a song before I get to the concert. I think it just enhances the experience overall. So in a way it's kind of like studying, learning everything at once but I think the lyric features just helps you have a better time at a concert."

- P10



Use case overview

As well one of the most frequently expressed use cases. People use the Spotify lyrics feature to learn the lyrics to new songs they like. Learning lyrics with the feature can take many forms and the motivators to why people do it vary. However, two motivators behind it that's been expressed by several participants are, before going to a concert, or before going to karaoke. People want to know the lyrics to be able to sing along and connect to the shared experience. It is a more focused interaction where the user is sitting with the lyrics. The interaction tends to be from the entire song, to an entire new album. Is done on all three devices but the desktop app seems to be the most commonly used. This might possibly be the case since the lyrics are, as for the other devices, presented in a clear way and that the desktop app's partial screen allows for an extensive overview while allowing users to navigate within the lyrics by hitting the intended line.

Associated user needs hypothesis

Easy access to lyrics

Present lyrics structured and organized

Help me connect to a song, a artist or others

Help me have a good time

Help me understand and learn songs

Understand the meaning

"I like relating to the artist and just knowing what they're saying and what the concept of the song. Some songs are just made and I could tell it's just a quick like rap song, upbeat type music. With some songs, like there, there's a story behind it."

- P3



Use case overview

Lyrics convey meaning and for some users, it's important to understand the artist's intention with a song. This triggers some users to use the feature. Through the feature users can read the lyrics as a whole and take in the lyrics in its actuality, while listening to the music. Users like that the lyrics help them relate further to songs and artists. However, they are left alone making sense of what it means.

Users will try to make sense out of the songs when they are out and about, or at home. It is done on all three devices, but the desktop and mobile apps seem to be the most convenient, since users might go elsewhere for further insight regarding the song and its lyrics' meaning. Examples are Genius, where people can have discussions with others regarding meanings and experiences, offering a social aspect they are left without with the Spotify lyrics feature.

Associated user needs hypothesis

Easy access to lyrics

Present lyrics structured and organized

Help me connect to a song, a artist or others

Help me relate to a song & artist

Help me understand and learn songs

Learn & improve languages

"Well apart from English, there's Spanish, Thai, Japanese, Korean, German, Vietnamese, like those are my main ones. Like I don't really think that music has a barrier and just cause it's in a different language doesn't mean you should keep yourself in your box. There's so much music in different languages that you can check out."

- P10



Use case overview

Music is a popular way to approach new languages. Through music, people can approach a language and its cultural expression. The threshold for approaching a language through music may also be lower, as opposed to books and films which can feel overwhelming, as music can be appreciated even before one understands the meaning of what is being sung. This appreciation grows the more you develop your language skills.

The lyric feature makes it easier for users by providing the lyrics to songs in the original language. Using the lyric feature to learn languages seems to be a focused activity that works on all devices. However, the desktop app seems to be the most suitable, as it allows you to easily search for translations on the side. While Spotify is doing a great job of providing the lyrics in original languages, people go elsewhere for translations and phonetic versions.

Associated user needs hypothesis

Easy access to lyrics in desired language

Present lyrics structured and organized

Help me connect to culture

Help me express myself

Help me learn languages

Help motivate me

6.2 Experience related use cases

The following seven use cases are closely linked to the core need for experience and feelings.

Sing along - alone / with others

"So like I'll have what I call like a jam sesh. Like it would just be spontaneous like while I've, I'm sitting at home probably like when the house is empty. Or like if I'm with my girlfriend or if I'm with my dog. And I just put the music up and put the lyrics up and I just sing the albums from front to back."

- P2



Use case overview

Alone or with others, users sing along with the artists with the help of Spotify's lyrics feature. It offers what users regard as a "close enough" karaoke feature, with the live updating and synchronised lyrics. It is used at social events such as house parties and creates jointly experienced activities, but it is also used in solo jam sessions to have fun and let out the frustration of the day. The times karaoke came up during interviews, in relation to the feature, users did not express a need to suppress the vocal track, but rather said that they prefer to sing along rather than sing over.

It's mostly done at home and even though it can be done together with all devices, TV seems to be the most favourable, for each of the two use cases. The desktop app, due to a laptop being mobile, is used when one sings alone, for example while doing household chores.

Associated user needs hypothesis

Sing along alone

Help me visualize how it's sung

Present lyrics structured and organized

Help me connect to song, artist

Help me have a good time

Help me express myself

Improve vocals and confidence

Help motivate me, help me relax

Sing along with others

Help me visualize how it's sung

Switch between solo and group

Help me belong

Help me have a good time

Help me express myself

Improve vocals and confidence

Help motivate me

Manage emotions - alter / augment

"There are times when I use the lyrics as like a bit of a, not an escape, but just to like, [...] if I'm experiencing an emotion, like sadness or upset or I'm disappointed sometimes. Like, I would like to allow myself to be free to feel that emotion before I move on with my day. [...] I find like the music really helps me to like really feel my emotions like deeper and when it comes to the lyrics and the songs that I'm choosing, it often reflects how I feel."

- P2



Use case overview

Users manage their emotions in two distinct ways with the help of lyrics. First is to alter emotions, to go from one state to the another and second, to augment emotions, to feel one feeling more intensely. Reading song lyrics while listening to the song helps users absorb the emotional meaning of a song effectively (Azuaje et al., 2021), as a means of regulating their mood. Mood regulation through engaging with lyrics is done all throughout the day. However, especially in the interaction with the desktop and TV app, it's done in the evening to unwind after a stressful day.

Associated user needs hypothesis

Alter emotions

Easy access to lyrics

Help me connect to a song, a artist

Help me manage my emotions

Help me impact how I feel

Guide my focus and attention

Augment emotions

Easy access to lyrics

Help me connect to a song, a artist

Help me manage my emotions

Help me relate to how I feel

Guide my focus and attention

Deepen music immersion

“And if the song, like if it’s one of the songs where I’m really just really engaged in [...] I’ll just stop whatever I’m doing. I’ll open up lyrics on Spotify, go straight to the lyrics and I’ll just start reading along, line for line with the song and just like immerse myself to its fullest. And I think just like lyrics, it just makes it so easy for me to do that.”

- P9



Use case overview

A deepened music immersion can happen for most of the other use cases. However, in some instances, the immersion itself is what the users seek. A multimodal perception of a song helps users to enhance and thus deepen that experience of music (Stratton & Zalanowski, 1994). An example of this was seen in the screener server, which revealed a number of users, with varying degrees of hearing impairment, who expressed their enthusiasm for a lyrics feature as a means of deepening the music experience. Examples of how the lyrics feature is used by this group were in the context of dance events for the hearing impaired to give a visual experience to the music, or in social context to enjoy music with family and friends.

According to the users, these interactions last at least the duration of a song. It’s possible on all devices but desktop and TV could make use of their bigger screen, to further immerse the user visually. As in any other use case, the experience is reduced when the feature fails to deliver the lyrics as expected, e.g. when the lyrics are not provided, or when they are not synchronised correctly or not at all. This is especially true when it comes to music immersion, as it disrupts the user’s interaction.

Associated user needs hypothesis

Easy access to lyrics

Help me connect to a song, a artist

Help me feel the music

Help me tune in out of the music

Create an ambiance

"So I have a TV in the living room with Spotify on it. And what I'll actually do sometimes is as I'm coming into the house I'll have Spotify open on my phone and I'll just switch it over from my phone to the TV. So as soon as I get there, it's right there. Like the lyrics are visible and I can just sit on the couch maybe with my laptop on my lap and just have lyrics and music playing there that I can always look up to and just enjoy."

- P9



Use case overview

Users use the lyrics feature on Spotify to curate a specific mood or atmosphere. For example, a user may want to create a relaxing ambiance in their home while they carry out household chores, or they may want to set a lively and upbeat ambiance for a social gathering. By using the lyrics feature to select songs with specific themes or moods, users can create a personalised ambiance that enhances their experience and suits their preferences. This use case may satisfy the need for personal expression and identity, as well as the need for control and organisation over one's environment. This use case is mostly done in the home and ideally on the TV app. Some participants mentioned they used it on their laptop as well, in instances when they had to move around. Then the laptop would accompany them as they moved between different rooms.

The visuals of the Spotify lyrics feature are appreciated and the fact that the background colour comes from the album cover created a reference back to the album. However, some colours were not liked due to individual taste. People like the lyrics' aesthetics. Letters carry visual value and the features' calm aesthetics are appreciated as they, according to the participants, do not demand too much attention as moving images would do. Having the lyrics together with the video was deemed not ideal.

Associated user needs hypothesis

Easy access to lyrics

Help me curate lyrics

Help me set a certain tone

Help me express myself

Help me focus and relax

Share & send lyrics

"I think having lyrics is a great way [...] to communicate with people in a way or like talk to them or like share your music taste, share what you love and yeah [...] with the music that someone's listening to, you can kind of take a look in to what they're thinking and how they're feeling. How different music and different lyrics resonate with us at different times of our lives."

- P10



Use case overview

Users share lyrics between friends and family or post it on social media. This can be a way to connect to others by expressing oneself. People meet and listen to music together and share their musical styles, with the lyrics offering a way to get closer to each other's musical style. Sharing lyrics on social media is currently only available for Spotify on the mobile app. The participants mentioned they send lyrics to friends and share lyrics. However, they mentioned this was something they did most when they were younger.

Associated user needs hypothesis

Easy sharing of lyrics

Help me shape my content

Help me connect to others

Help me share my experience

Help me express myself

Don't disrupt my listening experience

6.3 Utility related use cases

The following four use cases are closely linked to the core need for Convenience, control and organisation.

Find a song

"I also use lyrics to actually find music. Like I'm one of those people who [...] if I hear a song I like, I'm trying to remember the words so I can like Google it to find it, to add it to like my list."

- P1



Use case overview

When people try to find a particular song, they use lyrics to find the song. This could be for a song where they have forgotten the title and artist's name, or they hear a new song where the artist and title are unknown to them. People have a way of remembering lyrics, and remembering just a small part of a song's lyrics is an effective way to find what you're looking for. Allowing users to search through fragments of lyrics helps them to find songs, new and old, without having to leave Spotify and try to find them on Google. This is possible on all devices and is one of the most commonly mentioned uses of lyrics as a tool.

Users are happy with the functionality to search for certain songs using the lyrics.

Associated user needs hypothesis

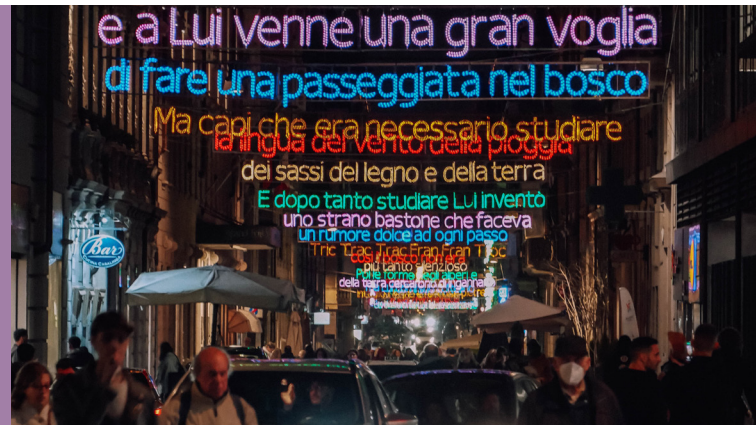
Help me find what I'm searching for

Save me time

Navigate the song

“Some songs sometimes have intros that are like, you know, a minute, 30 seconds long and I just want to get into the song. So I find the ability to like click on the lyrics and skip to that part of the song. I do, I do quite like that feature and I use it quite a bit.”

- P5



Use case overview

For songs that have vocals, lyrics can provide a reference point for the different parts of a song, including its instrumental parts. Through lyrics, people can localise where they are in a song. Spotify makes use of this and, through its lyrics feature, enables users to jump to a certain section of a song by clicking on the intended sentence. Users thus use the lyrics and the feature to navigate the song. Sometimes this may involve skipping a long intro or returning to a favourite part.

It's a well liked functionality of the lyrics feature and participants expressed their frustration that the lyrics feature on TV app does not allow for such interaction, as well as the full screen on the desktop app. There users have to navigate the song by going forward or backward using the progress bar in the “now playing” bar.

Associated user needs hypothesis

Help me get to where I want

Save me time

Save lyrics

"I would write it down in my like diary kind of thing. [...] Although actually I have screenshotted good lyrics a few times, but I don't actually do anything with them. I just keep them for myself."

- P8



Use case overview

Lyrics are important for people. Some put them on their bodies in the forms of tattoos, others wear them on clothes while others include them in entries in diaries. With Spotify, people can take print screens of lyrics to save them for later. The intention for doing this varies. This can be done on desktop and mobile since it's possible to printscreen. However, there is no other way for users to save certain parts of lyrics on Spotify.

Associated user needs hypothesis

Help me save stuff for later usage

Help me organize and categorize

Help me connect to a song, a artist

Help me keep lyrics that are meaningful

Playlist & music discovery

"Whenever I try and find new music, I have the lyrics up because otherwise I'm, I'm sort of missing out on half of the song cause I can't tell what they are."

- P5



Use case overview

Lyrics are a way for users to quickly form a surface level understanding of a song's meaning. When creating a playlist or looking for new music on Spotify, lyrics help users by giving them a quick way to skim through the content of the songs. The interviews revealed that this is mostly done via the partial screen of the desktop app, as users said that in this mode they felt that they still have access to all other Spotify functionalities.

Associated user needs hypothesis

Provide an overview

Help me filter songs

Help me find what I like

Help me discover new content

7 Implications for future lyrics experience

Now that the use cases have been presented, how can they be best utilised? This chapter attempts to speculate, at a strategic level, on the direction in which to go in order to improve the user experience of Spotify's lyrics feature. The hypotheses drawn in this chapter are based on the results and insights from the preliminary study and the user study.

This will be examined by focusing on the three use cases that, based on the outcome of the matrix below (see table 4), are considered to have the strongest potential to add further value to the experience of digital lyrics in a home context. As mentioned in the methodology chapter, the matrix consists of the use cases and four categories. For each category, use cases are given a value between one and five, where a higher number indicates how well the use cases relate to or fulfil these criteria. The four criteria, presented in chapter 3.3.2 Theorised implications, are:

1. **Placement on the UX pyramid.**
2. **How well it maps to the intended area of interest of Spotify's lyrics feature.**
3. **Potential to utilise the proposed capabilities of lyrics as artefacts.**
4. **Ability to utilise future trends in TV and Desktop.**

Table 2. Matrix of the estimated potential of the use cases to increase the user experience in the use of Spotify's lyrics feature.

Use Case	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Score
Clarify what's sung	3	2	3	2	10
Learn lyrics	4	3	4	3	14
Understand the meaning	3	3	4	4	14
Learn & improve languages	5	4	5	5	19
Sing along alone	5	4	5	4	18
Sing along with others	5	5	5	5	20
Alter emotions	5	3	4	5	17
Augment emotions	5	3	5	5	18
Deepen music immersion	4	4	5	5	18
Create an ambiance	5	5	4	5	19
Share & send lyrics	4	2	4	4	14
Find a song	2	2	3	2	9
Navigate the song	2	2	3	3	10
Save lyrics	4	1	2	2	9
Playlist & music discovery	3	3	3	5	14

The three use cases that will be presented are Learn & improve language, Sing along with others, and, Create an ambiance. These use cases received the highest score, and though speculative, present a great potential in adding further value to the user experience of lyrics.

Adding value with the use case, learn & improve languages

The use case opens up the dimension of a knowledge-based approach, which could include other audio-based content such as podcasts and audio books. Language learning with the help of the lyrics feature was not the most mentioned use case, but for the users that talked about how it helps them to approach languages, it was an important tool.

They said they did it mostly on the desktop app. One reason might be the idea of the computer being a private tool associated with work and information acquisition, and that it lets them easily go elsewhere for such as translations.

Adding value could be done by investigating ways to present the lyrics to users. This could include looking into translations for lyrics and as well how these are presented. This would contribute to the user's need of easy ac-

cess to lyrics in desired languages as well as the structure. Gamification offers further opportunities to engage users by motivating them further. Connecting to culture could be done by having a certain playlist with culturally important lyrics to grant insight.

Adding value with the use case, sing along with others

No other use case emphasised social experiences as much as the use case “Sing along with others”, which was also clearly rooted in the home and interaction with TV. It was also the use case that was most often mentioned in the context of viewing the lyrics function on the TV. The users expressed that the lyrics feature was close enough to a karaoke feature, with the live updating and synchronised lyrics. Interestingly, when the participants mentioned karaoke, the emphasis lay on the lyrics helping them to follow along. They expressed that they like to sing along with the artist and not that the vocals should be cancelled out. which put increased importance on how lyrics are presented.

The TV is the best suited device in terms of facilitating social experiences through people’s approach to it as part of the home, as well as having the large screen to use.

To add value to this use case one could make use of the users intent to sing with others and the way that lyrics are presented. Making use of the lyrics full screen view, the lyrics could be split or highlighted in different colours to help users in singing duets. To further increase the immersion for users, the way the lyrics synchronise and update could be made increasingly dynamic. One way could be to have them move to the beat of the song to mimic dancing along to further help motivate users and enable a truly social experience.

Adding value with the use case, create an ambiance

The development towards smart homes and the intention to curate the home environment through this use case, makes it particularly interesting. It is also the use case where the user stays the greatest amount of time in the lyrics feature through passive interaction.

The lyrics feature on Spotify help users to curate a specific mood or atmosphere at home. They may want to create a relaxing ambiance in their home while they work or study, or want to set a lively and upbeat ambiance for a party or social gathering. Users use lyrics to create a personalised ambiance that enhances their experience and suits their preferences. This use case may satisfy the need for personal expression and identity, as well as the need for control and organisation over one’s environment.

Although the visuals are appreciated and the fact that the background colour comes from the album cover, some users wanted to have the option to change the background colour.

Allowing users to have more influence over the visual style, by making aspects customisable, such as the background, would contribute to the sense of control. And just as you can choose a playlist for a certain emotion, you could choose an emotion for the visual. For example, if one wants to combine an intense song with a calmer background or one that seems more stimulating. Then how the text is presented, how much of the lyrics are made visible, font size and colour, all play into curating an ambiance and overall experience.

8 Discussion & Conclusion

The following chapter covers the discussion of results and applied methods and finishes with the conclusion remark.

8.1 The findings

The decision was made early on to focus on actual Spotify users that are actively or casually using the lyrics feature on the desktop- and/ or TV app. It can be difficult to see how anyone could be an expert user when it comes to the lyrics feature, and it's not that type of feature that supports or requires a kind of development of the system knowledge like a complex software such as Adobe Photoshop. However, basic experience with the feature was considered important.

The overview, together with each individual use case, provides a foundational understanding in the current use behaviours. The limitation is that they highlight how the current feature is used, since the research is based on what the lyrics feature enables and allows its users to do today. Say with another product like YouTube, other use cases might have been identified, such as having forum discussions about lyrics meaning. Here the thesis might have missed out by not not investigating how users would like to interact with lyrics in a broader sense. Instead it was done through the lens of Spotify's lyrics feature. However, for this thesis and the given resources, that might have been too resourceful and gotten too broad. Although the thesis' research questions were formulated in a general way, answering them was meant to provide insight for Spotify to know when and how to use lyrics. In the aspect of Spotify's lyrics feature it is considered to have been successful in providing a foundational understanding.

Early in the process and especially during the theoretical part, the question arose as to how cultural aspects could potentially play a role in how users engage with song lyrics as well as the approach to the home and the role of the TV and computer. In order to capture possible differences, the choice was made to address two markets. As already mentioned, these were the North American and British markets. As within the framework of the thesis, to train the knowledge acquired during the programme, there was no consideration of outsourcing the performance of the interviews to a third party. Therefore, for practical reasons, two English-speaking markets were chosen. The findings showed no significant differences in the behaviour and attitude of the users. However, it can be argued that the cultures of the two markets are neighbouring each other. Potential differences might have been more likely to be identified if a market with a different language with a different alphabet was approached. As for this thesis, this may have resulted in some use cases not being identified.

Another factor that might have resulted in unidentified use cases, is the number of interviewees. However, the answers to the screener survey provided a large source of information that already hinted at most of the use cases later expressed within the interviews. By the last participants' interviews, the insights started to become saturated. Therefore, it is considered that the thesis succeeded in identifying users' different behaviours and needs and communicating these via the proposed use cases.

8.2 Applied methods

Overall, the process of the thesis has been exploratory user research. The methods have built on each other where insights have guided subsequent steps. Below are highlighted some of the methods that have played a decisive role in the results of the thesis.

8.2.1 Screener survey

The survey was successful in finding users and giving some quantitative input of lyrics usage.

In regards to the high number of respondents, the screening survey could have taken a greater advantage of the chance of gathering quantitative data. Its purpose was to find suitable participants and an active choice was therefore to try to keep the questions down to a series of key questions to aid the identification of suitable participants. In hindsight, one or two additional questions could have been added exploring the attitudes towards the lyrics feature and its functionalities.

8.2.2 Online diary

The online diary presented the participants with two exercises, each with a template. The users did not abide completely by the provided template and instead answered with their own interpretation. During the interview sessions, some participants expressed having found the instructions of the templates tricky to understand and occasionally fuzzy. The intent of the template had been to have the participants' answers provided in a similar way to be able to compare them. However, even if the answers didn't follow the template strictly, they anyway adhered to the two themes of the online diary.

Even though the two exercises of the online diary intended to have a general take on how users related and interacted with lyrics, the input from the participants focused heavily on interactions and experiences of Spotify and its lyrics feature. However, the diary study was successful in getting a personal impression of users' relationship to lyrics. And it later worked great as a mediating object during the initial parts of the in depth interviews.

8.2.3 Analysis & synthesis

When carrying out the analysis, synthesis and evaluation, there are various biases to consider. One of these is confirmation bias, where more weight is given to evidence that confirms one's views and experiences. This may have played a role in the different phases, especially since the thesis was grounded in an interest in song lyrics and language learning. But by setting up four different criteria to evaluate the different use cases, it is considered that the confirmation bias that may have arisen has played a significant role in the outcome of the thesis.

Within the synthesis, other types of frameworks were evaluated. In the end, the use cases were chosen since they worked well with the Activity theory and Kano model, presented in section 2. The theoretical framework of the thesis.

The core user needs worked well, in that they lay the foundation of the synthesis. The specific user needs for each use case are a way to frame what the participants expressed their experiences to be. It can be argued that these are not sufficiently supported and that further research on each individual use case is needed to formulate more precise user needs. However, here they worked well to give depth to the core needs and each use case.

8.3 Future research

As a next step, it would be of interest to examine the developed framework in other markets whose culture is more distinctive in terms of language and alphabet. This is to see if a possible extension of the framework is possible.

8.4. Conclusion

Digital lyrics constitute a large part of how everyday people consume lyrics as an artefact nowadays, with streaming services such as Spotify offering lyrics and music together in the same place in a dynamic format. As many of these have similar services, there is an opportunity to differentiate themselves from other services. Here, Spotify can take advantage of advances in TV and PC technology to offer an immersive experience in the home. The presented use cases form a basis for strategies to know when and how to best use a lyrics function.

This thesis sought out to answer the following four questions:

Which are the users' behaviours when using lyrics in a home context and what moments, needs and goals do these reveal?

The use cases testify to the diversity of behaviours around song lyrics and the contexts in which they occur. People not only interact with lyrics when they are out and about, but they also fulfil a purpose in the home through oftentimes more concentrated interactions. The use case overview (Figure 23) summarises this and highlights the different ways people are engaging with lyrics to fulfil goals and needs.

How can the value and experience of using lyrics in the home be enhanced?

By satisfying the presented core needs, via their use case specific needs, the experience can be enhanced. Moreover, by identifying not yet satisfied specific needs, call it the identification of delighters, one can further add to the value of a digital lyrics feature.

In what ways can a lyrics feature on desktop and/ or TV App make use of these findings?

The Master's thesis demonstrates the diversity of uses that a lyrics feature provides. To tie back to the answer to the second research question, it is about addressing user needs. The thesis presents 15 use cases and through its evaluation suggests which use cases have the greatest potential to add value to users. There is no simple answer to the question of how a lyrics feature can utilise the findings presented, instead it is a matter of looking at each individual use case and how it can take advantage of technological advances and trends in how we relate to the home and the cognitive impact of reading lyrics can have. Such as the examples presented in chapter 7. Implications for future lyrics experience.

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Appendix 1

Benchmark study

Service	Tv App	Desktop	Free	Subs	Musix match collab	Notes
<i>Spotify</i>	X	X	X	X	X	<i>Live updating lyrics provided across platforms. (Enabled sharing on mobile) one coloured backgrounds with low croma. See chapter 1.1.3 in Report for additional explanation.</i>
<i>Apple Music</i>	X	X	-	X	X	https://www.macrumors.com/2022/11/10/apple-music-web-player-song-lyrics/ <i>Live updating lyrics similar to Spotify. Background seemingly takes inspo from cover art and creates a colourful dull blend with transitional colours. Work on multiple platforms. Lyrics is white and disappear when they are sung. Phrases about to be sung are found below in a translucent white. Otherwise, lyrics do not seem to offer more functionality and do not seem to appear elsewhere in the interface, outside of the lyrics. Not free.</i>
<i>Resso</i>	X	-	X	X	-	<i>Offers Lyrics. The background is not fixed but moves. Offers floating lyrics on mobile. Similar to Spotify. Live updating lyrics on desktop where the verse that is being sung is in the middle and you can see previously sung verses above and coming verses below. The text increases in size and gets white when it is being sung.</i> https://www.youtube.com/watch?v=Kn30uDSkf2s https://www.youtube.com/watch?v=xplq-1fWbXk https://www.youtube.com/watch?v=wXtz-ZTCfYE https://www.youtube.com/watch?v=FHy1mLWemBY https://indianexpress.com/article/technology/social/resso-tiktok-how-to-use-smartphone-ios-android-free-download-6163717/
<i>Youtube</i>	X	X	X	X	-	<i>On YouTube lyrics aren't necessarily provided in one given feature. However, users can obtain lyrics through various ways. It can be through the CC (Closed Caption) function, displaying the lyrics like subtitles on the screen. However it is not always provided. But by browsing through different versions of one song, users can usually find it either in the description of the video, included in the background or within a user comment. There one can sometimes find a translation of the lyrics, in various degrees of literal and semantic.</i>

<i>Youtube Music</i>	X	X	X	X	-	<p>Provided on Desktop and TV through the YouTube app. There seem however to be differences how to access lyrics between the platform. Might be explained that it upon recent was only available on the mobil. Lyrics search -> LyricFind, Musixmatch. Gets lyrics from different sources.</p> <p>Desktop: Allows copying entire text "Ctrl C". No live update. Entire text like a word document. Not for all songs. When you search for a certain song, it can show up as either song or video. The video does not have lyrics, not even CC. The song has it as an option. If it is provided. This might be the case with video as well, just not updated. But all the ones taken as examples had this trend.</p> <p>TV only visible through CC. Offers premium subscription- no ads? https://www.theverge.com/2020/3/24/21193255/youtube-music-lyrics-ios-android-app</p>
<i>Deezer</i>	X	X	X	X	-	<p>https://www.deezer.com/explore/de/features/lyrics/?utm_source=ad-words&utm_campaign=acq_DE_sea-dsa_web_search_perf_tnb-directsub&utm_medium=search&utm_content=dsa_premium_tnb_dsa-home</p>
<i>Tidal</i>	X	-	-	X	X	No Lyrics on TV app. https://tidal.com/lyrics

Appendix 2

Lyrics on big screen - Screening survey

Survey Flow

Standard: Intro and To avoid “professional participants” (2 Questions)

Branch: New Branch

If

If Have you previously participated in product or market research interviews or focus groups?

Yes, in the past 6 months Is Selected

Block: Termination (1 Question)

EndSurvey:

Block: To avoid “professional participants” (1 Question)

Branch: New Branch

If

If Have you or anyone in your close family ever been involved in the following activities, either pa... None of the above Is Not Selected

Block: Termination (1 Question)

EndSurvey:

Standard: Familiarity (3 Questions)

Branch: New Branch

If

If How familiar or unfamiliar are you with Spotify’s lyrics feature? Very unfamiliar Is Selected

Block: Termination (1 Question)

EndSurvey:

Standard: Devices (1 Question)

Branch: New Branch

If

If On which of the following devices do you view Spotify’s lyrics feature? Please select all that ap... Desktop computer Is Not Selected

And On which of the following devices do you view Spotify’s lyrics feature? Please select all that ap... Laptop computer Is Not Selected

And On which of the following devices do you view Spotify’s lyrics feature? Please select all that ap... TV Is Not Selected

Block: Termination (1 Question)

EndSurvey:

Standard: Participation (3 Questions)

Branch: New Branch

If

If Last question up! If selected, you may be asked to participate in a 60 minute 1:1 recorded remote... No Is Selected

Block: Termination (1 Question)

EndSurvey:

Standard: Contact Info (2 Questions)

EndSurvey: Default

Survey questions

Start of Block: Intro and To avoid “professional participants”

Q0 Hi,

Thank you for taking the time to take our survey! We are currently looking for users to participate in a 60 minutes interview session at the end of January, beginning of February, which will be conducted remotely.

If you are selected to participate, we will contact you directly via email. Please note that only those that are selected to participate in the study, and complete it in full, will be eligible for the \$140 reward.

Page Break

Q1 Have you previously participated in product or market research interviews or focus groups?

- Yes, in the past 6 months (1)
- Yes, in the past 6-12 months (2)
- Yes, more than 12 months ago (3)
- No, never taken part in product or market research (4)

End of Block: Intro and To avoid “professional participants”

Start of Block: To avoid “professional participants”

Q2 Have you or anyone in your close family ever been involved in the following activities, either paid or unpaid?

- IT or Web Design (1)
- Music or music production (2)
- Mobile telecoms (3)
- Marketing (4)
- Technology or Startups (5)
- Graphic Design (6)
- Software or Application Development (7)
- Radio, TV or Video production (8)
- DJing or Mixing (9)
- Market Research (10)
- None of the above (11)

End of Block: To avoid “professional participants”

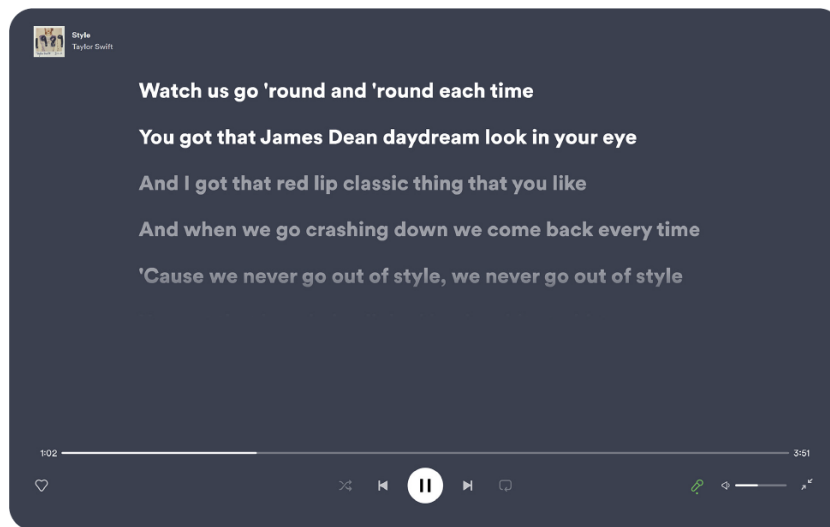
Start of Block: Familiarity

Q3 Which streaming service(s) do you currently use? Please select all that applies.

- Apple Music (1)
- YouTube (2)
- YouTube Music (3)
- Spotify (4)
- Netflix (5)
- Amazon Music (6)
- TikTok (7)
- Google Play Music (8)
- Pandora (9)
- Soundcloud (10)
- Tidal (11)
- Other, please type (12) _____

Page Break

Q4 In this next section, we will ask some questions regarding Spotify's lyrics feature, that allow users to view live updating lyrics to the music.



Page Break

Q5 How familiar or unfamiliar are you with Spotify's lyrics feature?

- Very unfamiliar (1)
- Somewhat unfamiliar (2)
- Neither unfamiliar or familiar (3)
- Somewhat familiar (4)
- Very familiar (5)

End of Block: Familiarity

Start of Block: Devices

Q6 On which of the following devices do you view Spotify's lyrics feature? Please select all that applies.

- Desktop computer (1)
- Laptop computer (2)
- Smartphone (4)
- Tablet (3)
- TV (5)

End of Block: Devices

Start of Block: Participation

Q7 What other services or tools to view lyrics do you use? Don't feel limited to mentioning only digital services.

Page Break

Q8 In a few sentences, please describe how lyrics fit into your daily life.

Page Break

Q9 Last question up!

If selected, you may be asked to participate in a 60 minute 1:1 recorded remote video interview session. The sessions will take place in late January and early February, and you will be able to choose a time that suits you. One week before the session, you will receive a link to a digital diary. It contains two small tasks that you will be asked to complete during the week.

If you are selected and participate in this study in full you will receive \$140 for your time. where you can select the way in which you redeem your personal reward from a variety of gift cards, charity donation, and direct deposit options.

Are you willing and able to participate in this interview?

Yes (1)

No (2)

End of Block: Participation

Start of Block: Contact Info

Q10 Let us know how to contact you.

Please give us the best contact details to reach you. If you qualify to participate, this is how we will get in touch with you. All details will be kept confidential, and will not be passed onto anyone outside of the research team.

Your first and last name: (1) _____

Your email address: (2) _____

Your phone number: (3) _____

Page Break

Q11 THANK YOU!

Thank you for taking the time to complete this form. We will review your responses and determine if you are a good fit for this particular study. If you are not a good fit this time, there is always next time - we hope that we can work with you on a study in the future! If you are indeed a good fit, we will contact you via email to schedule a time shortly.

Please click "->" to submit your response!

End of Block: Contact Info

Start of Block: Termination

Q12 Unfortunately you do not fit the criteria to be eligible for this study.

We really appreciate you taking the time to fill in this form, and we hope that we can work with you on a study in the future!

End of Block: Termination

Appendix 3

Interview script

Introduction - 10 min

Hi, _____ [small talk, ask if they can hear me good, how they're doing, where are they sitting]

Thank you for taking the time to meet with us today. I am excited to meet you and very grateful for your help with this and so are my colleagues who are working with me on the project. My name is Dennis and I am a researcher at Spotify, and I have asked to speak with you today because we would like to understand your experiences and opinions relating to the **lyrics feature and viewing lyrics on desktop and TV. And I just want to mention that when I say lyrics I mean the text embodiment of song lyrics.** We are talking to you because we want to understand your experience and make Spotify as good as it can be. We are not looking for praise, so please be honest. There are no right or wrong answers.

This session is going to be split into a few parts. It starts with the introduction we are having now. Then the interview is in 3 parts, we will start to look at the online diary you have used and go through some questions together; then we will talk about lyrics on Spotify. The last and third part will focus on the desktop and TV versions. After that we will end with a wrap up.

Even though I would like to talk about these topics, if there is anything that you are not comfortable talking about, for whatever reason, please let me know and we can talk about something else. And if you want to end the session, that is also fine - just let me know.

Before we continue I want to go through some formalities.

This session will last a maximum of 60 minutes. The session is recorded and observed. The recording will be used for research purposes and to demonstrate our findings within reports. Your full name will not appear in any documentation or presentation.

The NDA you have signed means that we have made a commitment to each other. You have agreed to keep this research confidential and not disclose what we talk about today with anyone else. And we commit to keeping your information safe.

Do you have any questions about any of this?

Given the information I've just talked you through, are you happy to take part?

Interview - 30 to 40 min max

Diary

Start big. Warm up. General questions to get into the mood.

When you scheduled this session you received a link and instructions to an online diary. I thought we'd start off by having a look at it. Would you mind opening it up in your browser and sharing your screen with me?

- How was it to use this tool?
- How did you find the process?
- Was there anything you struggled with or weren't sure how to represent?
- If we start off with looking at the collage you've made.
- Would you mind telling me about the approach you took?
- Did you add your own content to it?
- Could you summarize your collage for me?

- If you could tell it with a story?
- What does the collage represent for you?
- Let's continue to the second part where you traced your lyrics usage.
- What are the ways you've used lyrics?
- Are there other ways you sometimes view lyrics that you didn't write?
- What are your most common to least common ways of viewing lyrics?
- What usually prompts you to view them?
- Looking at what we talked about, would you mind explaining the importance of lyrics to you?
- What do you like about lyrics?
- In what moments/situations/context do you view lyrics?
- In what other moments/situations/context would you want to view and interact with lyrics? That you cannot today.

Spotify's lyrics feature

Starting to narrow down. Focus on the feature.

If we now move on to Spotify. Could you open up your Spotify on [TV Desktop], share your screen and take a minute to interact with the lyrics feature. If it's possible, please talk out aloud what you're doing. [1 min] So, thank you. You can leave it playing in the background, please just lower the Spotify volume for the sake of the interview. Feel free to go back to Spotify and have a look if it helps for the questions.

- If you had to explain the feature to a friend unfamiliar with it, how would you describe the lyric feature?
- What do you think of this interaction?
- How do you typically view lyrics on Spotify?
- Is it on Mobile, Desktop or TV?
- Background viewing/ active participating "sing along".
- How long do you usually stay within the feature?
- Which lyrics-window do you usually view? The partial or the fullscreen?
- What are your thoughts on these two compared to one another?
- Why do you believe you use it like that?
- In what moments/situations/context do you use them? (Here I can reference back to their diary if they've added something with spotify here or other application and why not spotify)
- Why do you believe you use the feature in these instances?
- How would you describe your interaction with lyrics? (like a persona)
- What are your thoughts about the lyrics feature on Spotify?
- What do you like?
- What do you dislike?
- What do you think of the visuals, the overall aesthetics of the feature?
- Anything you like/Dislike?
- If you could change something, what would it be? (why)

Desktop and TV specific

Let's now turn the focus toward the big screen devices.

- How do you use the lyrics feature on Desktop and TV, compared to mobile?
- How would you compare the experience of viewing lyrics on Desktop vs TV?
- What sets them apart?
- How would you describe the context of the two of them?
- What are Desktop and TV best suited for? You can think back on the diary you did if it helps.
- Like if they both had individual super powers, what would they be?
- Then just if you could imagine in the future, how would you want your interaction with lyrics to be? On desktop and on TV? Dream big.
- Do you have any recommendations for Lyrics moving forward?

Rounding up - 5 min

Time for stakeholder questions

Is there anything you want to add, that you thought of or that you feel that we missed to touch on?

Any questions for me regarding the interview?

Then we are done with the interview. **I will stop recording now.**

Regarding your pay you will receive an email with information. It can take one day or so. In the case you wouldn't receive an email, please reach out to my email that you have in the invite and I will get back to you.

There is one question I wanted to ask you. We will run an online group workshop quite soon in the future. Would you be ok if I reached out to you with further information and asked if you'd like to participate? **[Yes/No]**

Then we are finished with the interview. I want to thank you once again for meeting me today and sharing your experiences and thoughts with me. It is super valuable feedback for Spotify. I hope you also enjoyed this session!

Have a nice day/evening _____

Appendix 4

KJ analysis



DEPARTMENT OF INDUSTRIAL AND MATERIALS SCIENCE

Division Design & Human factors

CHALMERS UNIVERSITY OF TECHNOLOGY

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