

TurnApp55 - The Social Music App

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ABSTRACT

There has been an increased interest regarding how to make people stop enclosing themselves with their own digital devices. One of the suggested solutions is to use the phones themselves as the tool to break the bubble. In this report we explore one such option in the app TurnApp55, and outline its design and development. TurnApp55 is an app that relies on people's interest in sharing music they like with others nearby. The users add songs from their Spotify Premium accounts onto a collaborative playlist, where subsequently other users can add their songs and listen to the ones already submitted. Each user can then endorse songs they like, an action which notifies the submitter, leading to them being able to communicate outside the app and hence bursting the mobile bubble. The app was created through several iterations, from paper prototypes, via an interactive prototype, to a finalized Android app.

Author Keywords

Co-located interaction; interaction design; Android; app; Spotify; Nearby; sharing; material design; mobile devices.

ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

INTRODUCTION

TurnApp55 was developed with the concept of using technological devices to encourage and support the interaction between people directly, rather than through their devices, as its main focus. By using co-located and collaborative concepts, applications can provide support for achieving experiences between numerous users instead of the normal interaction between the user and their mobile device. This provides an opportunity for them to break out of their digital shell [6]. The device and its application must be seen as a tool to support the human interaction in order to create an experience which extends beyond the device and its user.

The aim of the project was to find a way to burst this mobile bubble, as well as tackle the challenges that emerge due to this. These issues include topics such as information privacy and how to support people when they try to open up to new interactions.

THE CONCEPT

In this section the initial idea, and the design which was developed based on it is discussed. The motivation behind the interaction and the aesthetics is presented, as well as the details of the implementation.

The idea

The initial idea for TurnApp55 came up during a brainstorming session on how music can encourage people to socialize and collaborate, even in contexts that are usually not seen as very social. Music is proven to unite people [9] and is something that most people can relate to. Further support for exploring the area of music and multimedia as a tool can be seen in Falling Asleep with Angry Birds, Facebook and Kindle [7], where the authors found that users travelling at velocities greater than 25 kph are 2.26 times more likely to use an application in the multimedia category.

Commuters in Gothenburg are often found sitting with their own mobile phones, either playing games or listening to music, and rarely talking to others unless they are in a phone call. However, the actions of others can influence our own behaviour [8] and the intention with TurnApp55 is to change the trend of enclosing oneself during one's commute.

Based on these findings the choice of developing an application which enables people to find new social interactions with commuters on a bus was made, with the intention of creating a social climate with music as the supportive tool. The app explores how to take advantage of the physical proximity of others in a limited space, enabling people to start interacting with the other commuters on the bus and leaving their enclosed mobile environment.

The idea is that the users collaboratively create a playlist when they are on the same bus. Each person gets to choose five songs from one of their own Spotify playlists and then shares these songs with the others. When listening to a track which another person has submitted, the user gets no information about what song it is but needs to make two actions: endorse the song to discover who the contributor is, and then

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talk to the contributor to find out the title and the artist. This means that the app's information distribution is limited, yet unfolding, hence affecting the way people act and interact [11]. By offering passengers an incentive and an excuse for communicating the hope is, if not to change, to question and challenge the social norms in a commuting environment.

The use context of the app was decided to be on board the electric bus 55 between the science parks of Johanneberg and Lindholmen in Gothenburg, Sweden. The reasons behind this choice was that the bus line is easily accessible, connecting the two Chalmers campuses, and because the electric bus provides an environment which is more quiet and pleasant than on a regular bus. The line 55 has also been subject for other experiments and projects, such as acoustic concerts [3]. The users are likely to be Chalmers students and employees, or people connected to the Science parks. The estimated use time of the application is about 30 minutes or less, corresponding to the users travel time.

The design

For the design and look and feel of the app, we wanted to make something related to Gothenburg. Another goal was to have a design that is not too obtrusive, since the focus is not the app itself but the human interaction that can be derived from it.

Interaction

Studies show that the average mobile application session lasts less than a minute [7]. Thus, the design of TurnApp55 was made minimalistic and unobtrusive in order to not actively interfere with the user. And it follows the standard Android design guidelines to provide a familiar interaction experience. The user journey, from start to goal, is linear and short in order to support the limited use time and also the limited time span spent while commuting. Non standard gestures have been neglected throughout the application to avoid confusion. To support flow, recently played playlists are presented first and the application itself suggests five tracks from the chosen playlist. Every step in the set-up process yields absolute minimal effort. Transitions and animations are designed to give instant feedback and ultimately increase understanding of the functionality and the depth of the application. The design went through several iterations to minimize the amount of buttons and choices which can stall users, to create a slick look and clear-cut flow. Since users are sharing personal information, limited yet some, with strangers upon entering the collaborative playlist, a call to action button was added. It serves as a reminder and offers the user an opportunity to opt out instead of using a modal window.

The signup process for first time users is simplified by fetching data, such as the profile picture, the playlists and the username from their corresponding Spotify account. These steps are incorporated in the onboarding process which describes the application and its purpose. The process makes users more familiar with the application from an early stage which results in little need of supportive texts and visual hinting while actually using the app. However, since the application requires Spotify, a login is needed to validate the account.



Figure 1. The Gothenburg themed graphic element.

Hence the onboarding serves as a more welcoming introduction rather than the login screen for first time users. The instructional texts and titles are inspired from Spotify in order to further support the understanding of the various functions.

Since TurnApp55 is a social app, all users have profiles containing a photo meant to help users recognize each other, as well as a tagline describing the user briefly. The tagline is meant as inspiration for other topics to talk about or just encourage the first step towards social interaction. In addition, every user can reach different levels that can be seen in the profile. The purpose is for users to track their own development as well as recognizing other users' previous contribution [2]. These levels are named Newbie, Apprentice, Entertainer and DJ and correspond to how many songs the user has shared in the app. This design decision was made to give an incentive to users to continue using the app and share new songs every time they ride with the bus.

Wanting to get the users' attention when one of their songs is endorsed, a design trade-off was made: enabling notifications. This is incorporated in the application to support recognition of both parties when users seek social interaction, making sure that both of the involved users get notified on the endorsement. The notification system is however only active when in the collaborative playlist.

Thanks to user testing, the risk of the users making mistakes in the app has been reduced to its minimum. However, there are stages where warnings are necessary to prevent faults. If the user chooses to hit the back button of the app when listening to a collaborative playlist, a modal window is shown to make sure the user did not accidentally press the back button. For errors that are not caused by the user, such as internet connectivity problems, an explanatory screen is used to guide the user on how to research the problem, to not leave the user in an ambiguous state.

Aesthetics

Low saturated colors are used for larger areas in order to give the app a subtle look and feel, while highly saturated colors are used uniquely for elements which require the user's attention. Interactive elements are consistently color coded throughout the app, which supports the understanding of actions. Other, non-interactive elements keep a consistent look and feel with a Gothenburg themed layout, see figure 1. The theme works as a reminder for the local use area and raises a sense of communion which could strengthen the will to establish new connections. The theme is subtle in order to not steal attention, but still apparent enough to convey identity which helps people trust the application [1]. To decrease the visual excise, borders and strong contrast where it is not necessary are kept to a minimum. TurnApp55 utilizes a lot of negative space to convey efficiency, focus and tranquility.

Google’s material design guidelines inspired the design of the application to a great extent. The guidelines are well documented and many modern applications make use of material design which enhances recognition and familiarity [4]. Thus, positioning, layout and functionalities are maintained to support perception. Further, material design holds many advantages towards more traditional design practices. It combines the clarity from flat design, but also the affordance and hierarchy from skeuomorphism with a subtle three-dimensional space. The typography have carefully been chosen due to its clarity; it is slightly rounder and wider than traditional fonts which is good for smaller screens [4]. The font weight is greater for titles and interactive texts to communicate affordances, while low weighted texts are used for body text and labels. Solid icons are used to ensure visibility on small screens. The icons chosen for TurnApp55 follow the conventions and norms of popular Android applications, with high emphasis on being similar to Spotify’s icon set.

Implementation

TurnApp55 was implemented as an Android application, using a client-host model. The host is a dedicated device on the bus itself, which runs as a background process to manage the shared playlist and continuously detect and communicate with nearby devices. The users are considered to be the clients, and are offered to express and share their favourite music by uploading it to the collaborative playlist on the host device. The communication between client and host is done using the Google Nearby Messaging protocol [5], which mainly utilizes bluetooth to broadcast messages to nearby devices. Since the default method of distributing information through Nearby is as a broadcast to any user the first issue to handle was to ensure that each message is only received by the intended user. As such each message is signed by a recipient, a sender, as well as what type of message it is.

The playback is done using the Spotify SDK [10], which uses the Spotify service to stream music as if the user was using Spotify. The downside of this is that the streaming requires a Premium Spotify account, which might alienate some users. The reason for using this is that Nearby consumes a lot of power while it is running, and it is thus good to limit its usage. e.g. not sending the user’s own music over the broadcast. A benefit of using Spotify is that the application gets access to the user’s playlists, albums, and favourite artists.

THE PROTOTYPES

At the start, the purpose of making a prototype was to have a shared understanding within the group on the information flow and what functionality the app should have. In order to be able to do a user test, we had a second iteration where an interactive prototype was made.

Paper prototype

The first prototype was made as sketches on paper, showing the flow between the different screens with arrows. It was very useful as it helped in realizing what screens were actually needed, where the flow felt natural or a bit forced and what types of interaction we were aiming for. In addition,

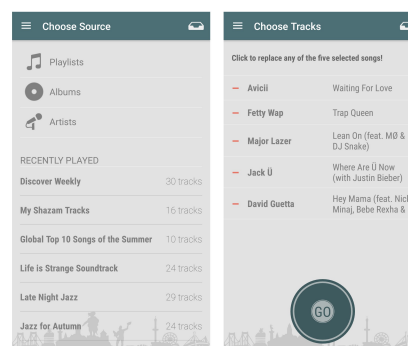


Figure 2. Once logged in, the user proceeds by selecting one of their playlists. After selecting a playlist the app picks five songs randomly, which the user can exchange by pressing them.

it gave us a base for discussing the interface further before making a prototype with higher fidelity.

Interactive prototype

Based on the conclusions derived from the paper prototype, more detailed, static designs were made for the different screens. These were then used in the making of an interactive prototype with a few animations. The purpose of the interactive prototype was to conduct a few user tests evaluating the design, the comprehension, the guessability and people’s general opinion of the app. The tests were semi-structured with some simple scenarios, where the results were noted down rather than recorded. The scenarios were made in a linear manner, following the actual interaction with the app. The aim was not to measure the usability, but to get a general understanding on people’s impressions of the app. Five people participated in the user test.

The users started by selecting a playlist, were supposed to change one of the automatically selected songs and entered afterwards the collaborative playlist, where they endorsed a song. Questions were asked by the moderator during the test, such as Did you understand what happened? and What do you think you can do on this screen? to evaluate the understanding of the app.

In general, the participants seemed to like the concept, as well as the design. One participant stated that he would be glad to share a good playlist with others, since he felt proud of the lists he made. Some things were however considered a bit unclear, mostly since the prototype had limited functionality and was not connected to the participants’ own Spotify accounts. This caused them to not fully understand where the music came from, as they did not recognize their own playlists. These issues would likely disappear with the implementation of the real app.

The results from the user tests were documented and expressed as suggestions for improvement, containing for example rephrasing of some sentences, adding text to encourage the users to talk to the contributor of an endorsed song, and make the endorsement gesture be a double tap in order not to do it by mistake. The user tests also served as inspiration for what to include in the onboarding screens.

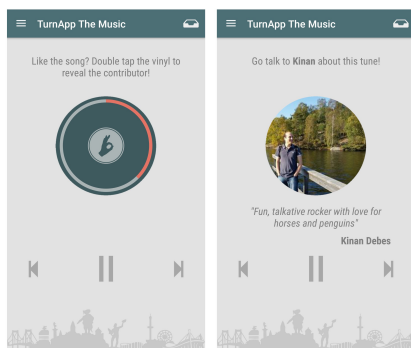


Figure 3. The basic playback view. Double tapping the endorse button in the middle reveals the contributor.

FINAL RESULT

The design, including the changes proposed from the user tests, was implemented using Android Studio and work at a satisfactory level. Not all the intended functionality has been implemented, and the possibilities for these will be given in the end of this section where we discuss future work.

In large the visual design of the implemented app is identical to the proposed design, see figures 2 and 3. The areas which differ are related to simplifications. For example, there is no need for a sign-up process due to the information which is available through the Spotify SDK. Furthermore, additional control elements were added in the playback screen, giving the user the ability to pause the music.

Due to time limitations, not all features were implemented in the app. The named levels for user progression, the user tagline and the notifications were neglected. Focus was instead put on having several devices function at the same time, as well as on making the whole experience seamless without unnecessary crashes and bugs.

For the future work, we aim to put the app on Google Play and contact Vasttrafik to try it out for alpha/beta testing on board a bus.

REFLECTIONS

TurnApp55 is challenging social norms, especially in Sweden, by encouraging people to talk to strangers on the bus. This means that the app might not appeal to the people who are less outgoing, something which can be risky as it affects the chances of reaching the critical mass of users. With too few users, it is unlikely that anyone would use the app, and is therefore something important to consider for the future. If the use of the app is extensive, it will lead to some new social interaction between people on the bus. It can also increase the experience of the music itself, in giving people a chance of sharing their musical interests. On the other hand, the app could be used in other settings as well, e.g. as an ice-breaker at parties, or in other environments, e.g. as a jukebox in cafes or bars, which could prove more inviting for social interactions.

On the other hand, it can be argued that the app can nurture interactions in the digital space as well. When users "like" a

specific track, a notification will be triggered on the contributor's mobile device. The app can support this type of interactions by adding a chat feature where users can still talk to each other in the virtual world. But since the app works only over short distances (no more than 10 meters) and a short period of time, our efforts were focused on encouraging real world interactions instead, where it doesn't really make sense to use text messages when the recipient is present within shouting distance.

We considered to design the app using vibrant colors in order to cheer up the users and make them more keen on interacting. However, the goal we wanted to achieve was the app being more of a background activity; an excuse to talk to others but not really that important in itself, and therefore we decided to go with a less saturated color scheme. Also, the discreet colors make the users' profile pictures stand out more, something that might favour the interaction between the users.

Having a short design process made it necessary for us to make decisions early on and not test everything as thoroughly as we would have liked. We had a clear division between programming and designing which lead to assumptions about what was easily feasible or not, resulting in not all the intended features being implemented by the end of the project.

CONCLUSION

In this project, we aimed to develop an app that would make people interact directly with others in co-located space, rather than stay isolated in their own mobile bubbles. The result is TurnApp55, a music-sharing app which pushes people to communicate verbally due to limited information distribution where only the contributor knows the name of the song and artist. There is still work to be made, but if it reaches the critical mass of users it can change the way people interact with music and each other.

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