**Business Case**

MusicMedley will be able to be utilized by many diverse groups of people. A few of the groups that our research showed would be interested in our design are businesses hosting social outings, bars, parties that have music, study groups, and anyone that listens to music or watches YouTube videos in a group. The thing that these groups have in common is that each contains individuals that have independent opinions on what they like. Since these independent opinions exist, our application will allow every individual at the event the ability to influence what is being played.

MusicMedley can produce revenue in a few ways. MusicMedley allows the user to better watch YouTube videos in a group, which makes our application valuable to YouTube. We could attempt to sell the application to YouTube so that they could take it over and add it as a feature all users have. Another way to produce revenue would be to sell advertisements based on the location of the user. This can be accomplished through add integration from Live Nation Entertainment. Live Nation Entertainment is seen as the largest provider of live entertainment in the world, "...somewhere in the world every 20 minutes is a Live Nation Event"(Live Nation Entertainment, 2017). We believe that concerts in the area could be advertised on our application, such that those close enough are inspired to go see the concert. In addition to GPS calculated advertisements, users registered as a business will have the option to buy advertisements to be displayed during their social outings. This would allow companies to show advertisements that are relevant to them and those attending the outing. By doing this we allow our users to personalize their events and also shows the other businesses attending the event the possibilities available for their future events.

To find out what potential users think about our concept and possible features, we created a survey. This survey was administered to a *diverse* demographic, including people of all ages, students under different areas of studies, and people of different professions.  From the survey, we found that 94.59% of those that answered, frequently listen to music with others. This shows us that there is a good amount of people that could potentially use MusicMedley. We also found that of those surveyed, 94.59% of people want to have the ability to request a song, and 91.89% of people wanted to have the ability to add a song to the party playlist. From the results that we collected we could infer that MusicMedley will be successful because there is a demand for a service that allows party goers to interact with the party. From these results, we are additionally able to infer that people like the idea of being able to choose the music and have the ability to influence the order of party playlist.

**Platform**

The design will be created on the android platform. We initially planned to implement the design on the Web, however after assessing requirements and discussing feature options that would best address these requirements, we found otherwise. We then discussed these different feature possibilities with Professor Hottell, from this we were inspired to incorporate GPS into the design so that hosts will have the option to make the party available only to those nearby. With this feature in mind, we then shifted to a phone app state of mind.

After some research and deliberation regarding whether to pursue our design via Android, IOS 7, or Windows, we quickly ruled out Windows. This decision was made after finding many discouraging articles and observed that Microsoft has begun to move away from their mobile platform. We then addressed the deliberation between IOS 7 and Android. The decision was not easy, but we decided to carry out the design’s implementation via Android Studio for a considerable number of reasons. IOS 7 apps require macs which many of us do not have. This option also requires a developing kit, a lengthy process for approval, and $99. Although Android apps began a similar process in 2015, “The bulk of manual reviews are handled by the automated system without any human involvement… The company claims apps are still making it onto Play within a matter of hours, which is a bit speedier than the days-long wait iOS developers regularly endure”(Welch, 2015).  Additionally, regarding market shares, “Android dominates the market with a whopping 87%, while iOS comes at a distant second at 12%”(Moon Technolabs, 2017). Android therefore has the lowest barrier of entry, and the highest portability among the possibilities, and affords us the ability to work with a wider range of APIs via their software development kit tools.

There are many modifiable open source solutions that will be used in the final design. The app’s design will afford the user with the ability to search for and select videos from YouTube. This process will involve the use of YouTube’s API search.list function to return a list of videos relevant to the user’s search. We will also need to utilize YouTube’s API to add YouTubePlayerView to the layout of the party’s host’s phone, doing so will ensure that the device playing the media does so without modification or alteration of any kind. Lastly Android Studio SDK tools will be useful in making it easier to perform API calls. This will be useful for calling Facebook’s Graph API that will allow our users to ‘Login with Facebook’. No hardware will be used.

**Competing Technologies**

As an Android music application, (a very competitive market), we *must* aim to differentiate ourselves from the current competing technologies that exist. Among these existing applications, there are background competitors as well as direct competitors.

Our background competitors consist of well-known apps such as Spotify, Pandora, iHeartRadio, and iTunes Radio. These technologies offer experiences that, although different, aim to achieve similar end goals. This involves providing listeners with personal music experiences, through smooth seamless interfaces. Their features entail song/station search and selection, sharing capabilities, and playlist creating abilities. Spotify even affords users the ability to make a playlist, “Collaborative”, allowing friends to amend songs to the playlist. This feature however still lacks the real-time aspect that would constitute a direct competing technology. The main reason why these background competitors stand as a threat to MusicMedley is because of their success, reputation, and accessibility.

These features differ when dealing with money, time, and personal preferences. However, they are also similar presuming that the power of playlist remains in the hands of the application. Refer to these services below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cost | Payment Provides | Revenue | Unique Features |
| iTunes Radio | $0 - $24.99 | ·   Exempts user from ads  ·   Skip unlimited songs | Ads  Monthly  cost | This app provides and genius tool and playlists that analyzes the data of the music the user loves and constructs a new playlist based off of that data. This app also provides a “Buy” option that allows users to download the song immediately and access them offline. |
| Pandora | $0 - $3.99 | ·   Ad free music  ·   Higher quality music  ·   More song skips | Ads  Monthly cost | Pandora lets its users choose a playlist and, at random, will play music based off of the genre, artist, or song. Users have the option to like or dislike tracks. |
| Spotify | $0 – $9.99 | ·   Listen to exactly what you, when you want  ·   Play music offline  ·   Unlimited skips | Ads  Monthly cost | Spotify allows for the most robust music experience option. Users may listen to anything they want, whenever they want for an expensive cost. It is also Facebook incorporated so your Facebook feed my view who you are listening to. |
| iHeartRadio | Free | ·   None | Ads | iHeartRadio Users can use a like/dislike option that will filter the radio station according to the data of the like/disliked song and make it more analogous to the users preferences. |

(Palmer, 2013)

        Our Direct competing technologies aim to satisfy the need for people be able to influence the music at a location/event, *in real-time*. These technologies include Turntable.fm, TouchTunes, and “The Amateur DJ”. Turntable.fm was a web attempt to create parties where authorized users could add songs to a playlist that was subject to user discussion via chat. This website however, lacked the simplicity and mobility our Android App will afford as well as the ability for *all* users to amend and influence the order of the playlist. TouchTunes is an in-venue music platform typically found in Bars and Restaurants that strives to “encourage social interactions through shared experiences”(Touchtunes, 2017). Because we also aim to do just so, we must proceed in a fashion that aims to satisfy the requirements TouchTunes left behind. TouchTunes affords a *limited* repertoire of songs, and only allows users the ability to influence the order of the playlist through buying their way to the top. In affording to our users more influence at no cost, we aim to not make our users feel like guilty impulse buyers. The last direct competitors are, “The Amateur DJs”. These competitors’ knowledge of basic Traktor DJ software and repertoire of illegally downloaded songs, combines with their ego and magical ability to know what everyone wants to hear, resulting in, “the perfect party every time”. Their ability to observe reactions and take requests from people present in their immediate area, positions them as our leading competing technology. Unlike the Amateur DJ who may choose to blatantly disregard someone's request or gauge the feel of the crowd incorrectly, our design will obtain accurate real-time data from people at a party and ensure that everyone’s opinion and suggestions are equally valued and accounted for every time. Refer to the figure below to compare why individuals will choose MusicMedley for social outings rather than these competitors.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Service | VS | MusicMedley |
| TouchTunes | Involves money to give the user what they want |  | Free of cost to give the user what they want |
| Amature DJ | Several risks involved  Inconvenience of word-to-mouth communication |  | Risk free  Straightforward and immediate communication  Capable of receiving feedback from *everyone* present |
| Turntable.fm | Lack of growth during high competing times caused it to fail |  | Ensure futuristic user experiences and design for a prospering outcome |

**Solution’s Features**

In our solution, we plan to implement features that promote user inclusivity in social environments. In other words, we will ensure that our app doesn’t hinder the user's interactions with others at the social event. It is vital that users are able to utilize the features at the degree to which they chose. As stated in *Competing Technologies*, our application will aim to satisfy that which was not by our competitors. We will put the power of the playlist into the hands of each user. Questions in our survey served for proof of concept and feature feasibility. From this research, we discovered that users indeed wish to amend and influence the order of a party’s playlist.

The following features will be used to reflect the requirements formed during our preliminary research. In order to join the fun, users will first have to register a profile. As mentioned earlier in the *Platform* section, users can either login with Facebook, or create a new profile (within our apps MySql database). In this sign-up application state, users choosing the latter will be required to provide a username, password, full name, email, and birthday to ensure underage users are not viewing explicit content. Once the required information is entered, the profile is created and the user is directed to their profile page where they can choose to add a profile photo, view their party history, their most frequently liked videos, a playlist of their “Loved” (bookmarked) videos, and their friend list.

From the profile state, users will have the ability to either join or register a party. The latter will involve the party’s host setting a party name, password, and establishing whether or not explicit content/underage users will be allowed. Users who join a party will be able to suggest songs and influence the order of the playlist by liking and disliking songs, ‘loving’ a song will also register as a like. When in the party state, the user will be provided with the playlist in the ascending order of likes, making evident what will come on next as well as inform the user of recent changes and additions to the playlist.

**Feasibility**

        All of the technologies needed for our solution currently exist and are easily accessible. No licensing will be required for our design will comply with and operate under YouTube’s existing Terms of Service. Android Studio will cost 25$ when the time comes to upload the app to Google Play. Java will be used in Android Studio to enter and extract data from our teams MySql database. This will require that team members will become proficient in the use of Java and Android Studios, as well as MySql. Learning the ins and outs of Java and Android Studio won’t be easy, we will therefore be utilizing Pluralsight, Code Academy, and W3Schools to manage the learning process. We will need to brush up on Sql queries for we will need to set up the initial database that our Java will then interact with. From there users will (unconsciously) create the system data. As they interact with the application, a series of Java scripts are used to maintain the data in the MySql database.

**Risks**

With the MusicMedley application comes the need to collect substantial amounts of data. This data creates risk because it is important to keep our users’ data private.  Location services being used for the application creates risk because of the threat of being tracked. To mitigate our risk, we will have a section in our terms of use that tells the user that the location services will be used with this application and that by agreeing to the terms of use the user is giving up their rights to know who is using, profiling, sharing and selling their location data. The user will also be informed that the location services for our application will only be tracking them when the application is in use. By doing this we are limiting our liability as well as allowing ourselves to sell advertisements based on the location of those using the application. When the user creates an account, there will be information that is required of the user to begin the process. To mitigate the risk of the users’ data getting into the wrong hands we will encrypt this data at rest.

During MusicMedley’s proof of concept, one problem that we encountered was copyright laws and the possibility of violating artist song rights. We are mitigating the risks that come with using songs by using YouTube to play the songs. Under the terms of service of YouTube, “You also hereby grant each user of the Service a non-exclusive license to access your Content through the Service, and to use, reproduce, distribute, display and perform such Content as permitted through the functionality of the Service and under these Terms of Service”(Youtube, 2010). Since YouTube has this in its’ terms of service that all users must agree to, we are protected from violations of copyright infringement.

As mentioned earlier in the *Features* section, users are required to provide their date of birth such that we can check that they are over or under the age of 18. A potential ethical problem arises with the possibility of people under 18 seeing or hearing content that they are not permitted to see by YouTube. Therefore, to mitigate this risk, in the sign-up state, users not signing up with Facebook will be *required* to provide their birth date for account registration to proceed. If the party's host is underage the application will default to only allowing content appropriate to play, but if the host is 18 or older the application will allow the host to choose if explicit content is played. After the question of age, if the user says they are 18 or older we will put a disclaimer that must be accepted by the user to move on. The disclaimer will say that the user must affirm that they are 18 years or older. In doing this, we realize that users could lie about their age, but by adding the disclaimer we mitigate our risk by transferring the risk to the user who lied about their age.

**Team Composition**

        Our team is composed of four members who are pursuing cognates in Business, Computer Science, and Human Centered Computing (HCC) Design. Noah, whose cognate is business, will be dedicating a majority of his time into working with the database since a previous internship allowed hands on experience in this area. He will also be guiding the group through how to allow our app to gain profitability and avoiding potential risks that may arise in the development of our app. Emma, whose cognate is computer science, will use her prior knowledge of programming to focus on coding the logic for our application. Ensuring that MusicMedley has an attractive, user friendly design is pertinent to the success of our solution as bad design can deter potential users from using our service. Since our application relies heavily on user interaction, Abby and Bennett will focus their attention on the design of the applications interface due to their HCC Design cognates.

        Each member of the team will need to expand their knowledge in their specified areas in order to successfully create a fully functioning app. Additionally, each member of the team will need to acquire a basic understanding of each area within the project to be able to help another member if issues arise. Noah will focus his training on furthering his knowledge of SQL, as well as learn both Java and Android fundamentals through Pluralsight. Abby will focus her training on utilizing Android Studios to ensure a comprehensive design, as well as learn Java basics and testing for Java in order to help with testing code through Pluralsight. Bennett will focus his training on design within Android Studios, as well as learn the basics of Java through Pluralsight. Emma will focus her training diving deeper into the Java language, and learning about Android Studio through Pluralsight. A more detailed outline of the training needed for our team can be viewed within the training document.

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