

Social networking platform to create music collaboratively

M.Des, Degree Project (Stage -1) report

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Submitted in partial fulfillment for the award of degree of
Master of Design in Interaction design

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Approval sheet

The Interaction Design project (Stage -1) entitled "**Social networking platform to create music collaboratively**" by Vijayapavan Amaravadi is approved in partial fulfillment for the award of degree Master of Design in Interaction Design.

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Acknowledgements

I would like to thank the people whose names are mentioned below for their valuable contribution to my project.

My project guide Prof. Ravi Poovaiah for expert insight at several stages of the project and co-guide Dr. Ajanta Sen for being a continuous guiding force to resolve the complexity of the subject.

Mr. CP. Narayan, Mr. Sekhar Kusuma, Mr. Sajit and Mr. Eli Yamin; the experts in music field for giving me the inputs about music domain with which I am completely unaware of. Their insights about project concept were instrumental to several refinements in design.

Prof. Anirudha Joshi for valuable suggestions during stage presentations.

All the users who are music enthusiasts and amateurs with whom I had interacted at IITB campus, Mumbai city and Hyderabad city throughout the project duration.

All the friends, faculty and staff at IDC for their continuous support. Especially my classmates Mr. Sachin Ghodke and Ms. Hemruchi Shah for being part of earlier brain storming and ideation sessions.

My parents, sisters and family members for giving me inspiring words to accomplish the project.

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Abstract

During the II semester's interaction design group project, the idea of *Singo* was conceptualized as a web platform where online real-time composition of music can be done among peers through social networking. But, *Singo* was not strongly rooted in actual needs and social structures of music world because of lesser time available then. Present project is an aim to bridge these gaps and to make the platform very intuitive for everyone to create and connect through music.

The project started with extensive analysis of *Singo* with users and other stake holders with the aim of identifying the gaps & opportunities in the concept. Regular screening of articles about music in well known magazines and newspapers (Times of India, Hindustan Times & DNA – All Mumbai editions) was done to know the trends & needs to socially connect in the domain. Attending about seven Jam sessions, five concerts in IITB campus, visiting a recording studio at Andheri and discussions with 15 stake holders helped to understand the interactions and communication needs while creating & composing music. Experimental exposure towards music mixing software like Audacity, Sound forge and Magix gave an understanding about mixing and editing controls required at basic level.

Design is conceived to cater the needs of all levels of expertise (from Humming to Jamming) in Music field. Ideation was routed to include several strata of music field from parody making to bhajans to music bands by giving them equal status on the platform. Stress was laid on to socially connect the enthusiasts at different levels to enhance their skills to next upper limit. One of such features is giving special status to teachers, critiques for easy identification while browsing the platform. As the music is collaborative field, importance was given to web communities (bands or albums here) by giving them more space than to individual assets.

The platform is designed with a mixing console with important mixing controls required for an online jam session. Colours are used to differentiate among several genres of music. Similar graphical interfaces were used to identify the users who are available online and also to recognize the music piece being played. Users can perform offline mixing also by keeping the individual tunes open for contributions. Importance was given to musical interactions than textual by limiting the scope for comments to minimal number. The redesign facilitates an environment for anyone to explore music creation right from basic task like humming a tune to collaborating in a jam session.

Introduction

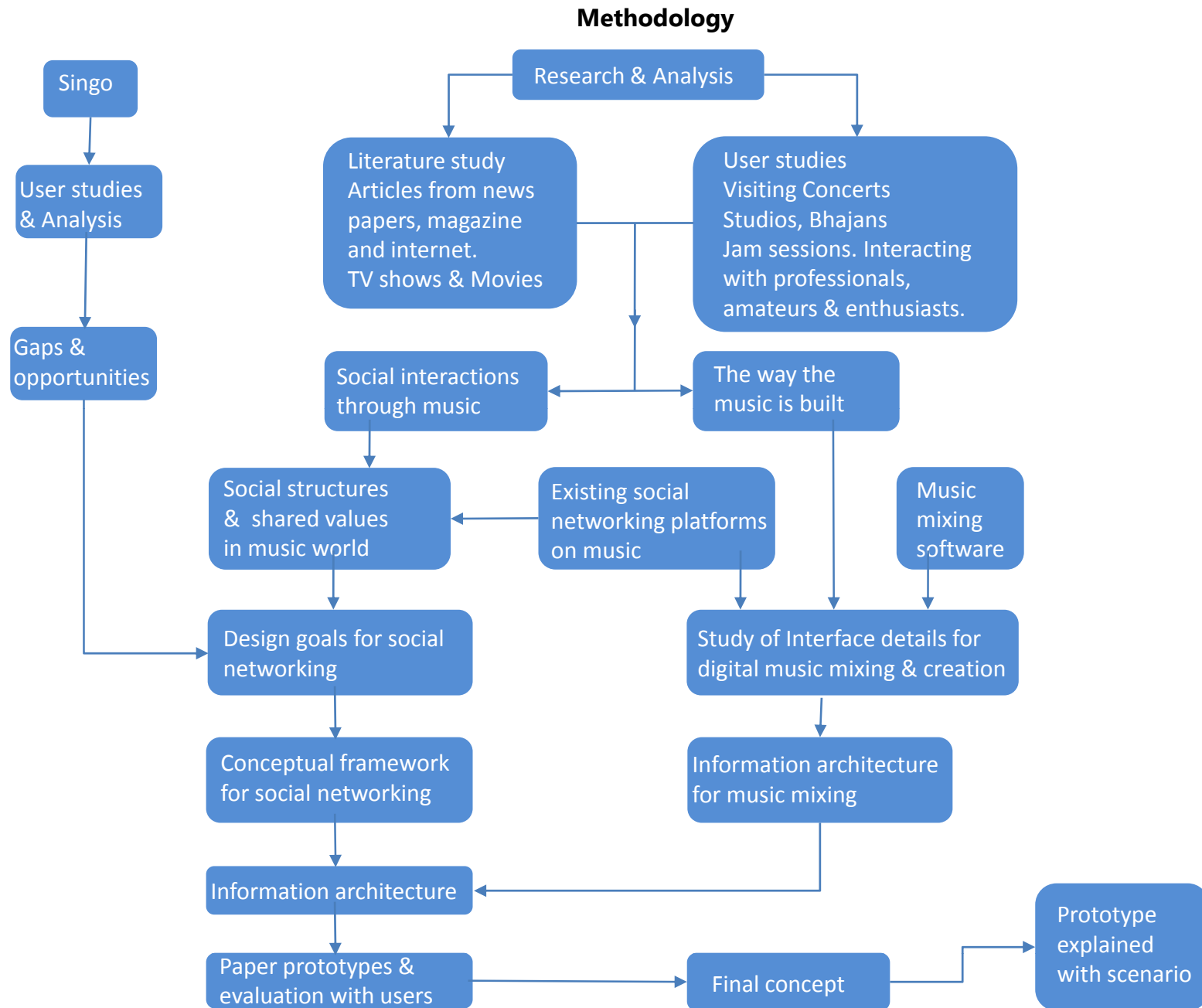
Involving with music is a fundamental phenomenon that exists in every human being¹. Every one at least hums a tune if she/he is moved by any kind of emotion. The tune can be a creation or replay of an existing one. Even though such an emotive driven creative act is a basic task and is within the faculty of human senses, very few get a chance to upscale their interest and enhance their talent due to several social, cultural and physical dispersions.

Music is so diversified that it creates diverse interests in terms of instruments and genres among its practitioners of varying expertise levels². The act of collaboration through several social connections among these divergent people is key to right from furthering interest to full fledged creation. Socializing through music has been a phenomena that is existing in human societies for long³. Music has been a back ground or fore ground score for many such socializing events. Web technologies give new scope of musical collaborations through which, above mentioned dispersions can be bridged.

Wish list

I am an enthusiast of music but not a music freak . At the end of Singo project in last semester, I was filled with a zeal to work further on the project to fulfill several wishes. Some of them are purely personal and some are with larger societal concern. They are,

- To understand the world of music better and to work on a media based innovation.
- To learn and solve the complexities involved in interfacing between two creative domains i.e., music and design.
- To create a musical medium through which everyone can create and express through music.
- To make music creation easier and nearer for every one (from Music is divine to music is humane too).
- To help and provide a showcase platform for huge amateurish talent present in underserved communities.



Singo screenshots

Singo – Windows Internet explorer

www.singo.com/profile/1ab2cd3456789

Singo - Home Studio | Music Library | Buddies | Singobands

Studio

Mute @ Lyrics by Mendes

Me - Composer			This is my life.... I live my way....
Vocalist - Sameer			

Music Library

My Records

Ghal ghal It's OK..	Kya keh.. Good...
It's life.. Copied..	Sa ri ga ..

My Contributions

Khwaja... Dedica...	Jara jara Challen...
Dil tho... Hmm...	Every....

My Collections

Damma...	Maine ..
We will ..	Danger....

My Network

Search Singo

★ ★ ☆
 Welcome, Home
 Sravan
 25, Male
 Mumbai
 Singer
 Rapp, Sufi
 Guitarist
 Heavy metal
 Scrapbook
 Settings
 My Anthem

 Jashne - e - bahara

My profile while checking
a contribution from other
member

Singo screenshots

Singo – Windows Internet explorer

www.singo.com/otherprofile/1ab2cd3456789

Singo - Home Studio | Music Library | Buddies | Singobands

Studio Mute @

Rekha -
Ramayya vastha..

Me – Guitarist

★ ★ ☆

Rekha
18, Female
Jodhpur

Hi, Sravan....., me an
aspiring singer and
travelling freak, let us
rock the Music
world.....

Singer
Classical

Key Board
Jazz

[Add as buddy singo](#)
[Send her a scrap](#)

Rekha's Anthem

Tauba tauba

Music Library

Her Records

Ghal ghal Kya keh..

It's life.. Sa ri ga ..

Sa ri ga .. Sa ri ga ..

Sa ri ga .. Sa ri ga ..

Sa ri ga .. Sa ri ga ..

Sa ri ga .. Sa ri ga ..

Her Contributions

Khwa ja... Jara jara

Dil tho... Every....

Dil tho... Every....

Dil tho... Every....

Dil tho... Every....

Her Collections

Damma... Maine ..

We will .. Danger....

We will .. Danger....

We will ..

My Network Search Singo

Other's profile, when
I am contributing to
her/his record.

Singo screenshots

While jamming online

The screenshot displays the Singo web application interface within a Windows Internet Explorer browser window. The address bar shows the URL www.singo.com/profile/1ab2cd3456789. The navigation bar includes links for Home, Studio, Music Library, Buddies, and Singobands.

Left Sidebar:

- Profile:** Features a user avatar, three stars, and a welcome message: "Welcome, Home".
- Personal Info:** "Sravan", "25, Male", "Mumbai".
- Interests:** "Singer Rapp, Sufi" and "Guitarist Heavy metal".
- Links:** "Scrapbook" and "Settings".
- My Anthem:** A section showing a waveform and the title "Jashne - e - bahara".

Main Content Area:

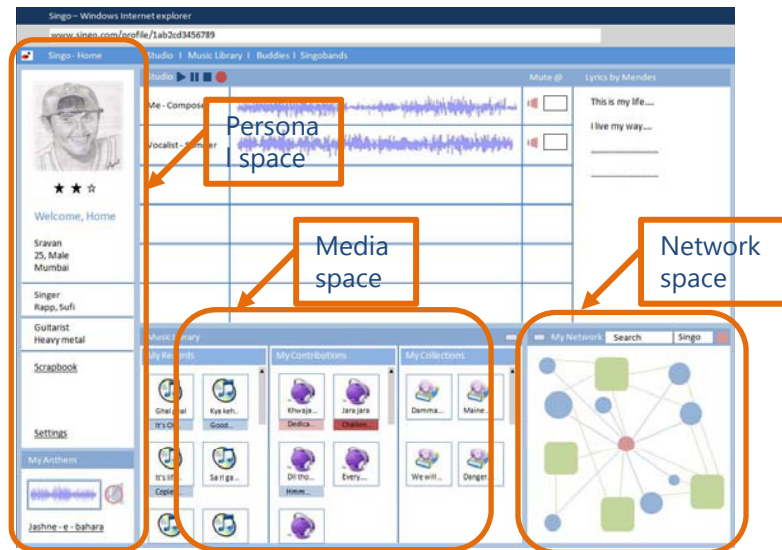
- Studio:** A section for live jamming with a play/pause button and a red stop button. It lists four participants:
 - Me - Composer:** Shows a continuous blue waveform.
 - Vocalist - Sameer:** Shows a continuous blue waveform.
 - Flautist - Julfi:** Shows a sparse blue waveform.
 - Pianist - Vikram:** Shows a continuous blue waveform.
- Mute @:** A column with speaker icons and checkboxes for each participant.
- Lyrics by Mendes:** Displays the lyrics "This is my life...." and "I live my way...." with dotted lines for continuation.

Bottom Section:

- Music Library:** A vertical sidebar on the left.
- My Network:** A large area displaying a network graph with blue circles and green squares connected by lines. A search bar and the "Singo" logo are at the top right of this section.
- Volume Control:** A vertical slider on the far right.



Singo screen shot .1 : Login/Signup page



Singo screen shot .2 : My profile while checking a contribution from other member

Singo introduction

Singo was designed with a clear demarcation of personal space, media space and network space in the layout. Every member of Singo can have her/his profile on the platform where she/he can exhibit and share her/his musical interests with peers. Every member owns a virtual studio where she/he can compose/edit/mix music online.

In Singo the music files were classified under three categories . My records lists the creations made by the profile owner. My contributions lists the music bits which have received addition/contributions from other profile. My collections is about user's collection of popular songs from movies & albums etc.

Along with the status of other users presence online, user checks the contributions, comments, requests, challenges and scraps received from others. While playing any such contribution, studio also displays the lyrics and who wrote them.

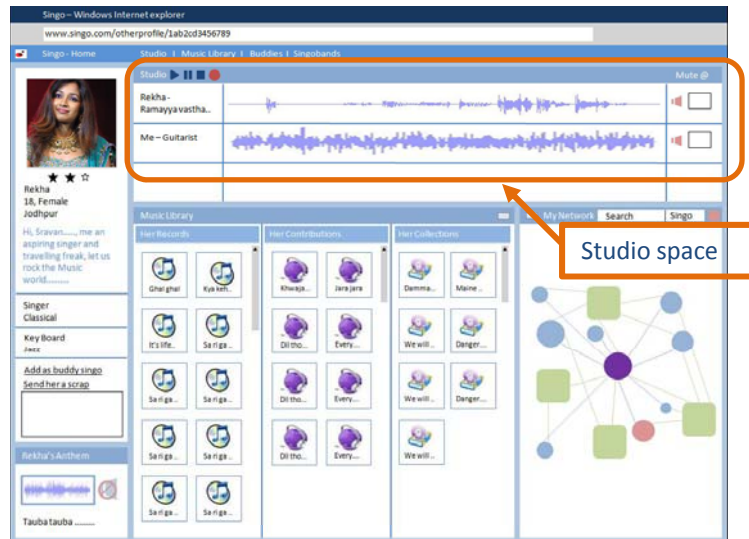
Singo displays the dynamic network diagram to show connections the user is having on the network in form of buddies and bands. One can be part of any number of virtual bands depends upon the interest. A band comprises of group of people the user is associated for any composition. User can search for other users, bands, music tracks and genres in the network space.

Singo introduction

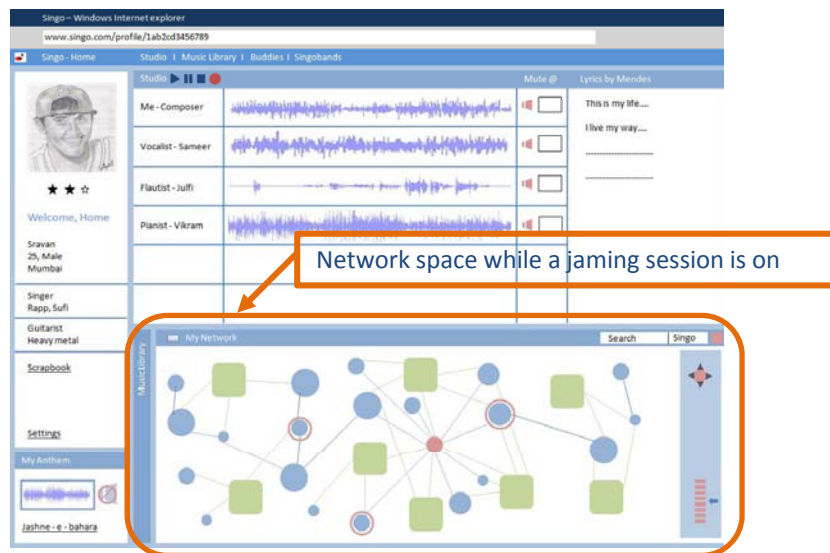
In Singo one user cannot access the studio of other user completely, to prevent editing of the other's music without permission. But one can play all music bits that are present in the profile. One can contribute with his creation to any of the other user's records in her/his studio when the she/he is offline. The contribution will be uploaded in both users' 'My contributions library'.

Editing, modification, mixing and composition can happen during online jamming. Online jamming can be done when there are group of users present online on Singo at their respective locations. It can be done under the studio of any member of the group, and that person will be regarded as chief composer of that session and she/he will have all controlling rights while the session is on. Other members will get the mixed file as contribution in their library. They can edit their own track on the composition at any time.

While a session is on, library will be minimized and network is expanded to show the status of participating members and other members who are listening to the session. The chief composer can be selective about who can listen the session.



Singo screen shot .3 : Other's profile



Singo screen shot .4 : While jamming online

User studies on Singo

User studies were done to realize the pro's & con's of Singo. Users selected were from diverse musical interests with different levels of expertise (enthusiast to professional) on music and are from different age groups. Users were not told all details about Singo. It was mentioned to them that it is a Social networking platform for Music.

Users who have a bit of expertise on digital music creation were able to interpret Singo as an online interface for editing and mixing music. Other users interpreted it as a platform for sharing and playing original music. The differences in the skill level among the users was key to understand the concept of virtual studio for each profile. But no user was able to understand the platform as virtual space for online real-time composition till the explanation was given. Waveform representation gave a quick idea even to enthusiasts that on platform, one can do more than just playing the music. Users who learnt the music from a teacher, suggested to have notations for each track along with the lyrics. But other users did not suggest any such despite the differences among their skills.

The classification of music files as My records, My contributions and My collections did not go well with all users. That sounded very complex within the layout design. My contributions was partly an exception with young users, but was pointed out that it was not mentioning who is contributing to whom. Users were divided in opinion about the requirement of a section for popular music as My collections.

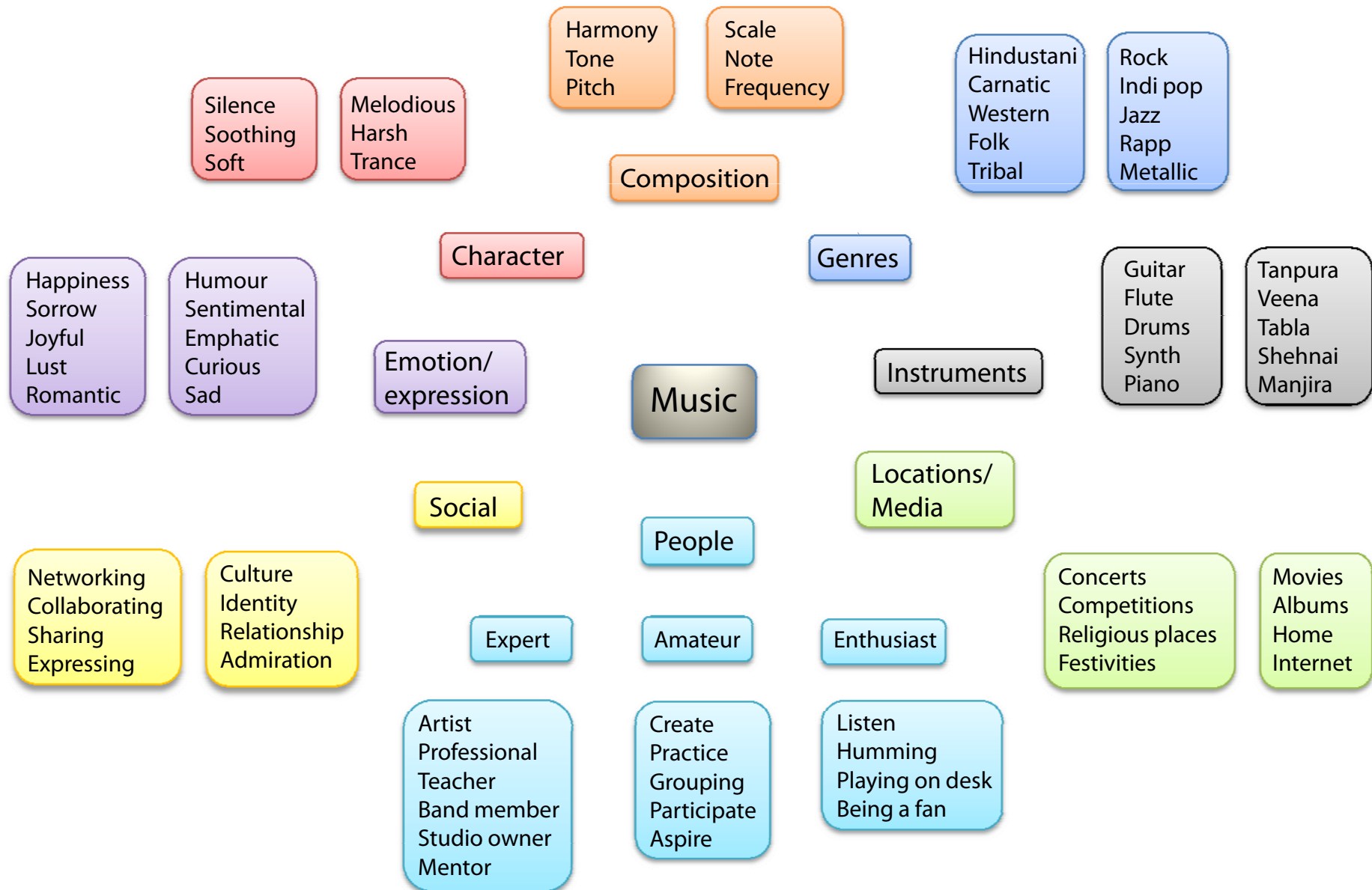
The network diagram was not intuitive not only for Orkut generation but also for other users as well. They insisted on having the list of buddies than a map. Users suggested that it should show only the people associated with when a track is being played. Users insisted on having photographs to identify the peers on network. The concept of parallel bands was very well received by the users but the graphic gave the first idea as just another community/group. Users also suggested to have a section informing about happenings in music world.



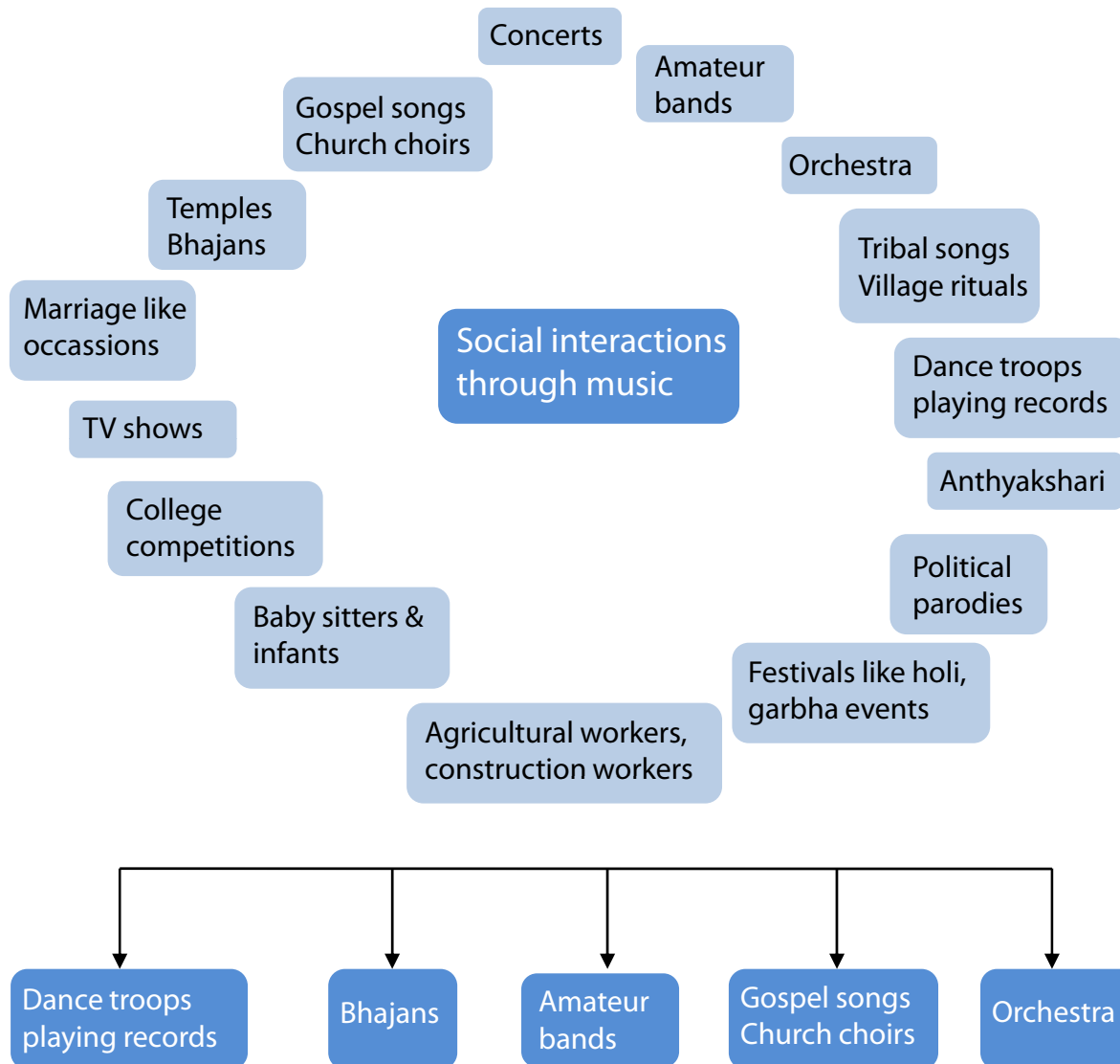
Gaps & Opportunities

- Deeper understanding about Music creation to be done.
- Detailed user studies were to be done to know the social structures in music.
- Singo needs to be improved to be culturally relevant.
- The platform could fulfill needs of larger audience if real world interactions involving music be made inherent.
- Singo's musical intuitions needs to be improved to cater to needs of enthusiasts.
- The complexity in the structure and layout needs to be resolved.
- Prototype of the concept to be made to bring the concept, near to reality.

Eco system of Music



Social interaction through music



It has been a known fact that music has been a part of human society in many aspects.

Many occasions and social spaces within the social fabric of life are woven around music right from naming a child to auspicious national events. Some events are totally encircled around the concept of music creation and in some, music is just a background playing element.

Music, either in creation or in replaying form acts like a binding element in these spaces in one to one interactions, one to many and many to many as well. This gives strong scope for furthering these interactions into virtual world to connect unearthed needs and to evolve new forms of musical interactions.

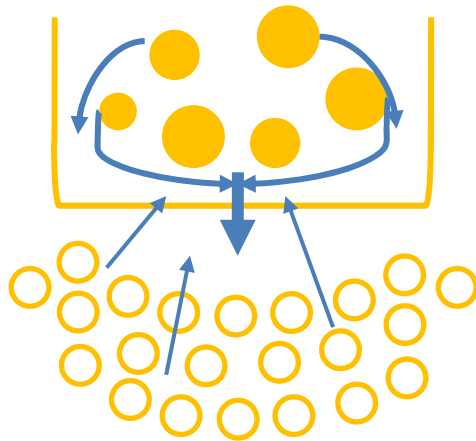
It is required to understand degree of social interactions among these occasions and spaces for the subject of the study. Hence for the benefit of study five of them have been chosen for further analysis on social structures around music. These social spaces are those where large number of people involved and where creation or experimentation of music happens.

Social interaction through music

Social structures

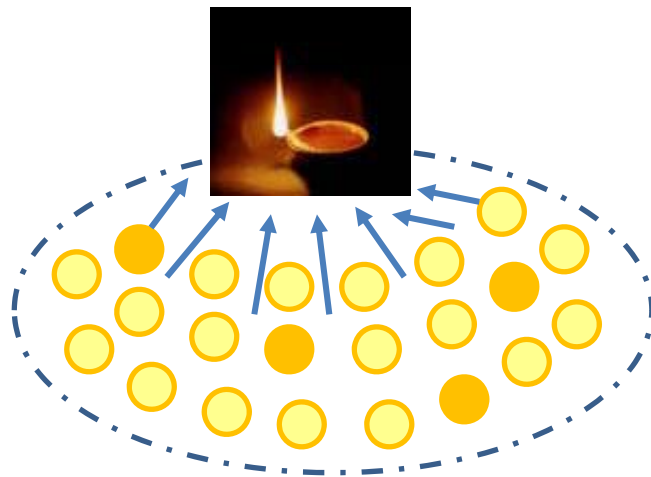
Dance troops playing records

- Very entertaining social event in rural / semi urban India
- Very amorphous and joyful environment
- Fusion of music, dance and drama – semi structured
- Highly interactive, even audience too involved in experimentation
- Creation may not happen, but imitation and parody are prevalent



Bhajan

- Very democratic – any body can sing
- Faith is the binding element than music
- Most accessible form of worship for common man using classical music
- Creation not regular, but experimentation happens within the religious guidelines



- Performer
- Audience
- Performer who is also part of audience

Social interaction through music

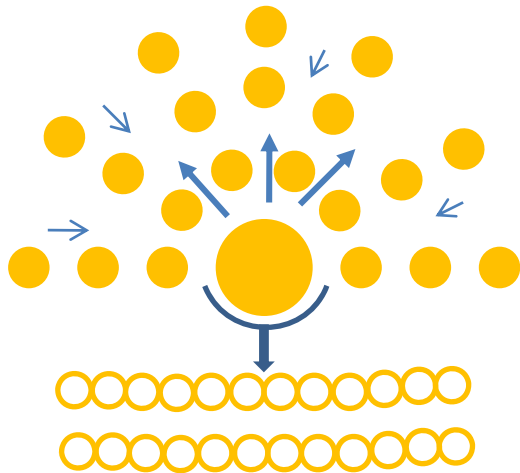
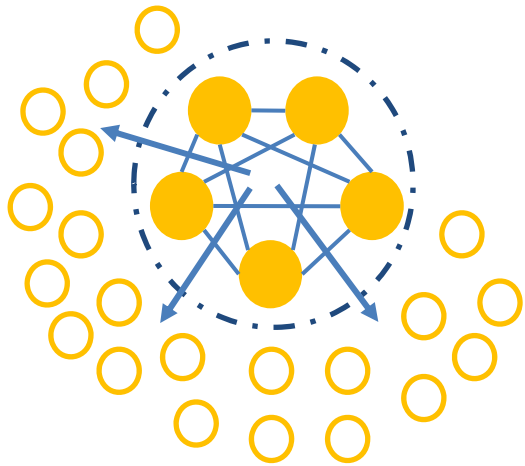
Social structures

Amateurish band

- Creative zeal is the binding element.
- All members are equal.
- Strong desire to connect, collaborate, explore etc.
- At amateurish level, audience are equals and their opinions are highly valued.

Orchestra

- Very formal and structured
- One sided interactivity
- Conductor is the supreme
- Conductor's body language is the key to the show
- Audience have to be silent and their role is limited to listening
- Music created is of highest quality.





Social interaction through music

Social structures

Church choir

- Good mixture of Orchestra and Bhajan
- Audience are part of chorus
- Priest is supreme
- Begins with inspirational words
- Parallel singing than repetition and following

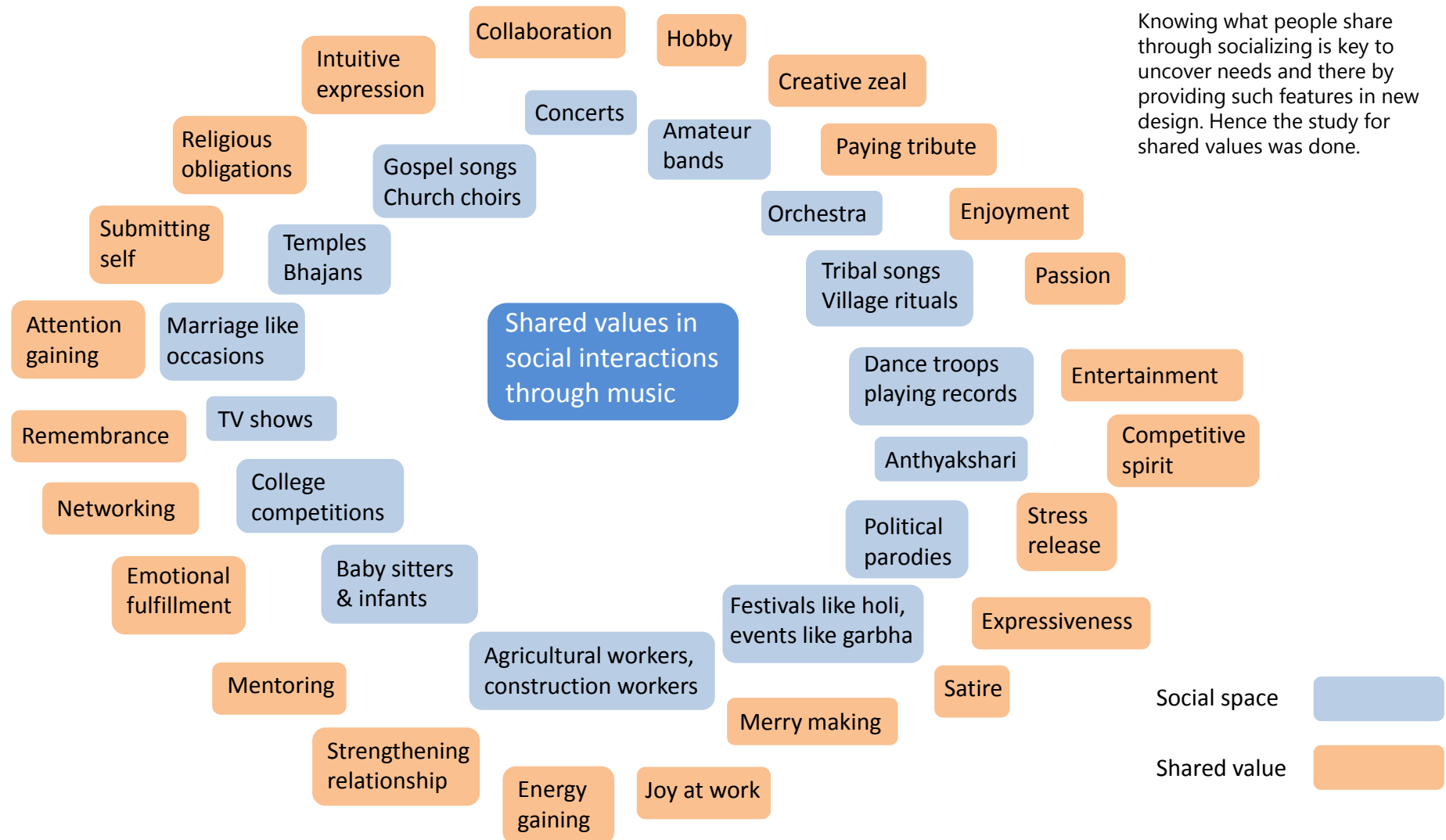
This analysis of social structures in music groups made me to realize to provide a scope for social networking among certain groups which have been kept out of the phenomena despite their dynamic and vibrant character of interaction.

Eg: Parody songs and bhajan groups.

Including such groups could initiate new paradigms of social interactions in music world. These inclusions can also help in fulfilling the needs of certain sections and give them a chance to exhibit and share their talent in a more open environment. This could give a chance to raise an enthusiast to begin as an amateur.

Shared values

Social interaction through music



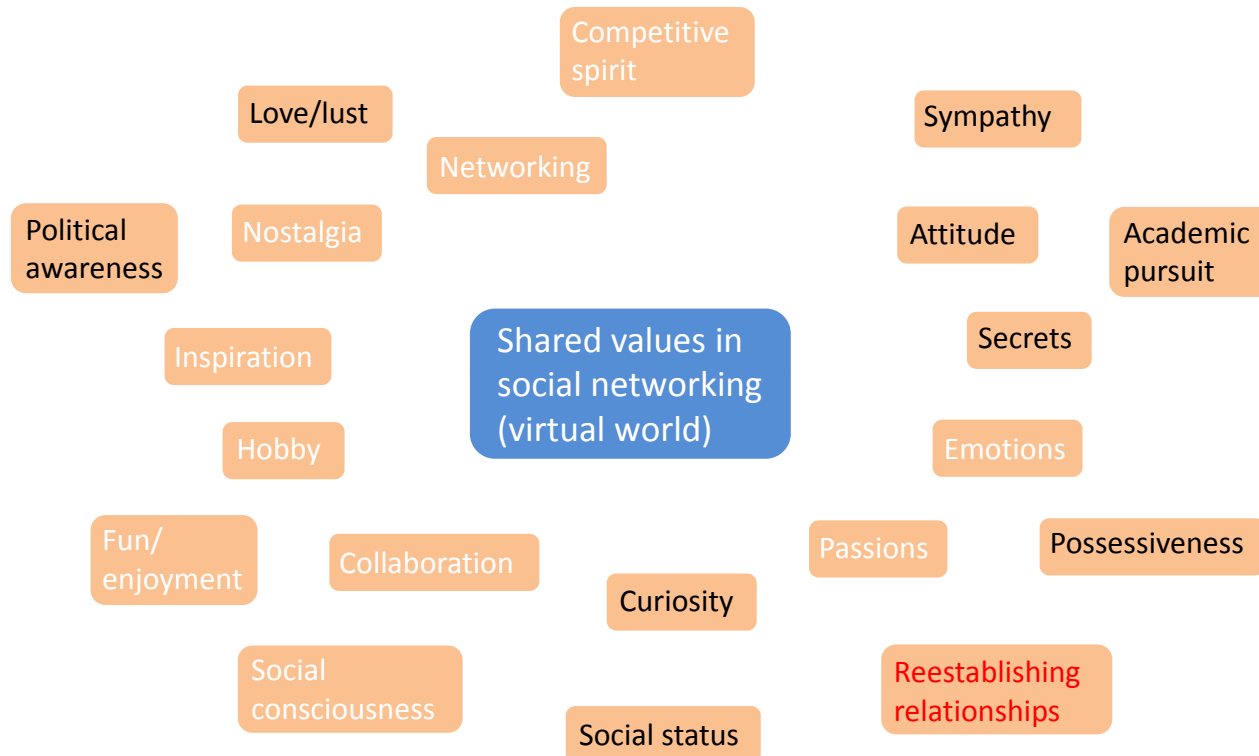
Note: Values are positioned randomly but not exactly with respect to the near by social space.

Shared values

Social networking in virtual world

It is also important to find out common shared values between social interactions through music and existing social networking sites. Incorporating solutions to such needs is vital for success of the platform.

And creating music, itself being an immersive task, the platform needs to incorporate few uncommon shared values as well in it's design.



Common value, in context of design

Friendship

Uncommon, but in context of design

Creative zeal

Uncommon, not in context of design

Curiosity

Uncommon values from music

Creative zeal

Enhancing interest

Improving talent

Contributing & helping

Religious obligations

Social interaction through music

Relationship dynamics

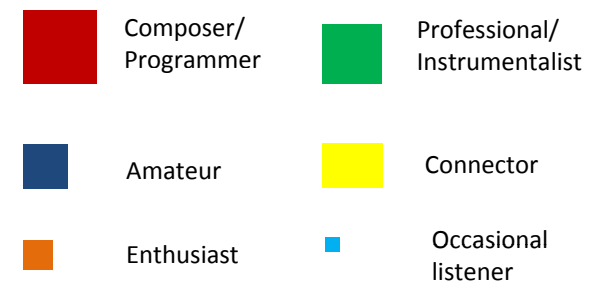
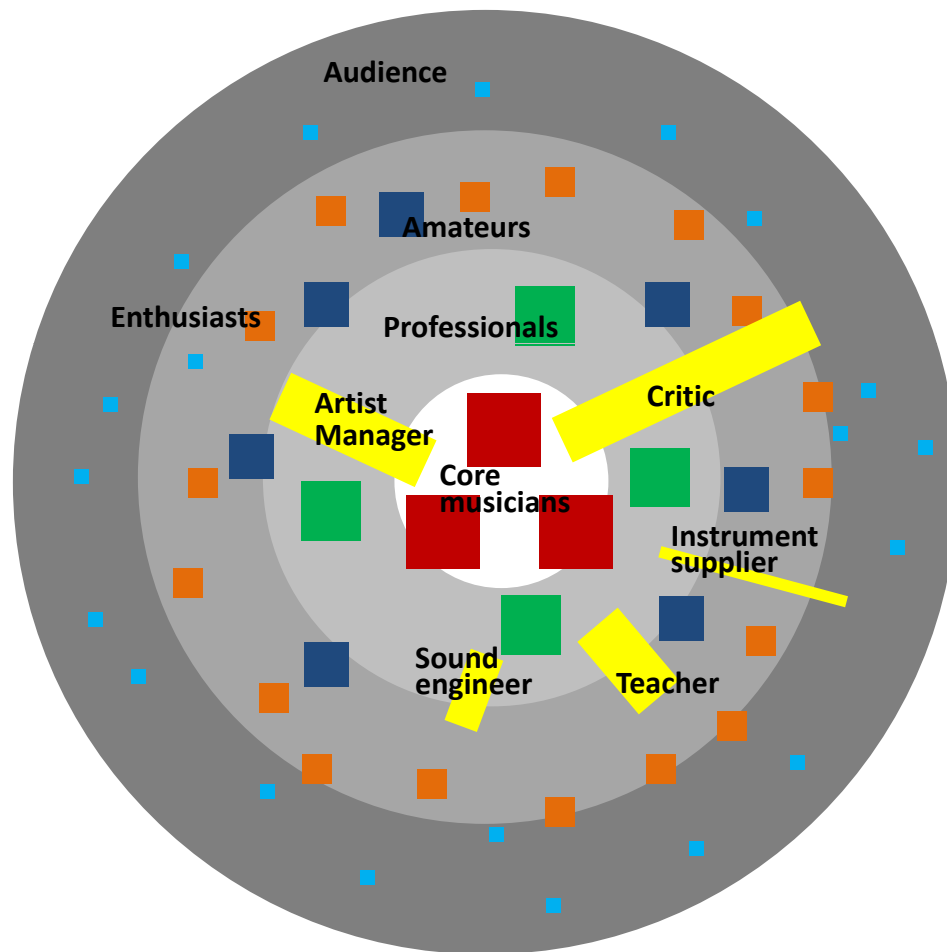
In any network, connectors are primary to expand one's contacts to further the socializing.

Even in music world some stake holders have large number of contacts than others and they get to meet anyone from enthusiasts to core professional. This is due to the very nature of the work they do in the field.

Hence a mapping of stake holders was done with expertise levels on concentric circles with core being at the centre.

This led to understand the connectors on the field whose interactions traverse across and with different influence capabilities.

Eg: Instrument supplier may have more access but his influence is limited on other stake holders because his work is more of business than music creation.

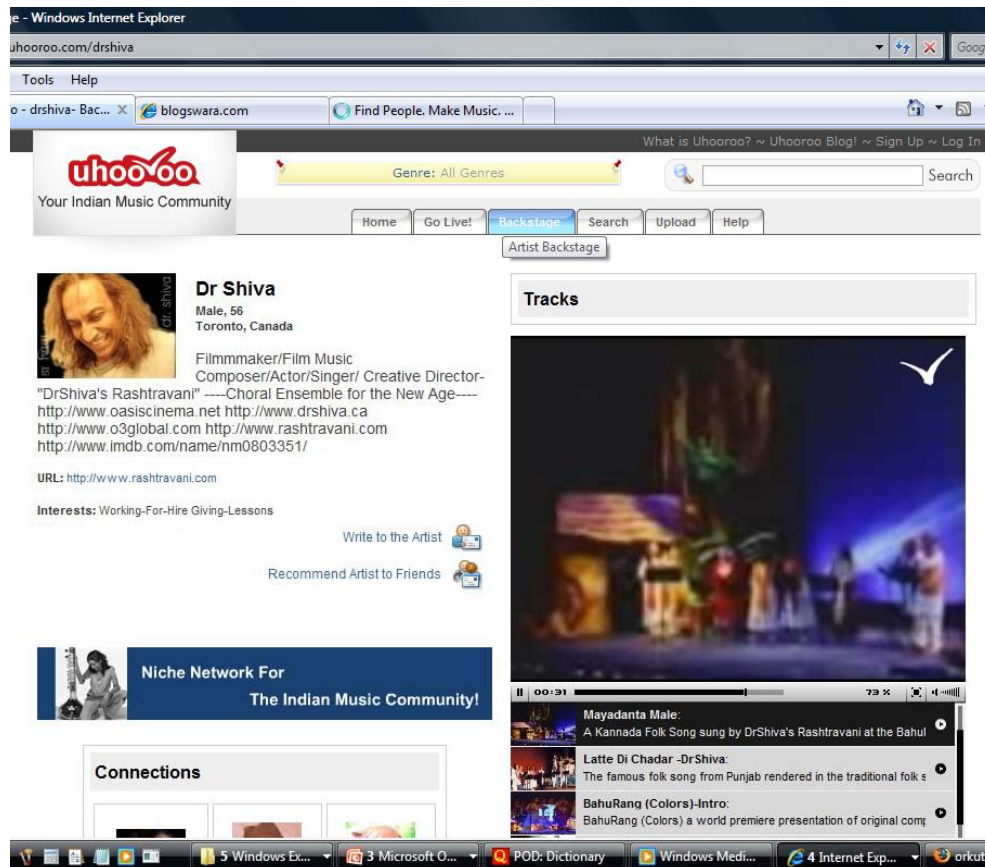




Existing social networking platforms on music

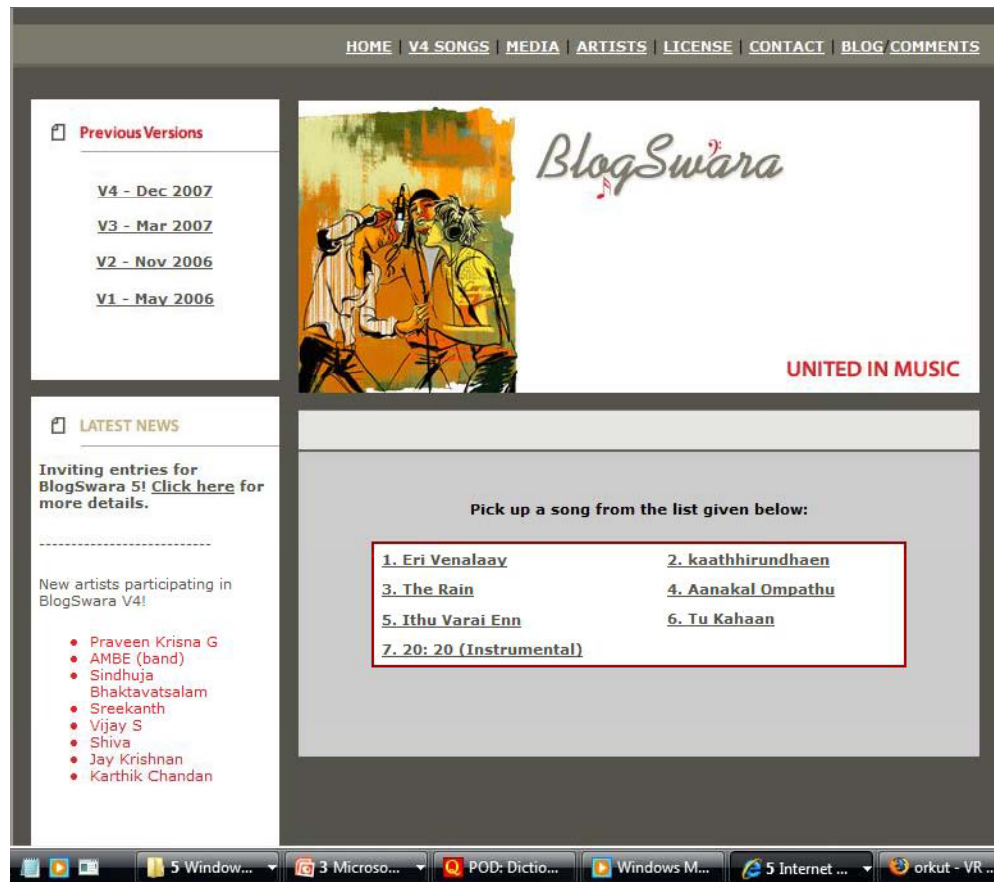
www.uhooroo.com

- For Indian musicians (all genres) and for anyone who is interested in Indian music.
- Only for sharing and online listening.
- Music starts to play immediately after opening any profile.
- Text messaging is prevalent among the members.
- Interface is simple with limited features.
- Site is successful in drawing people from all age groups and genres because of its Indian touch in the images and text.
- URL for every member through Uhooroo link is another attractive element for user.
- No band is formed yet even though the provision is mentioned.



Existing social networking platforms on music

www.blogswara.com

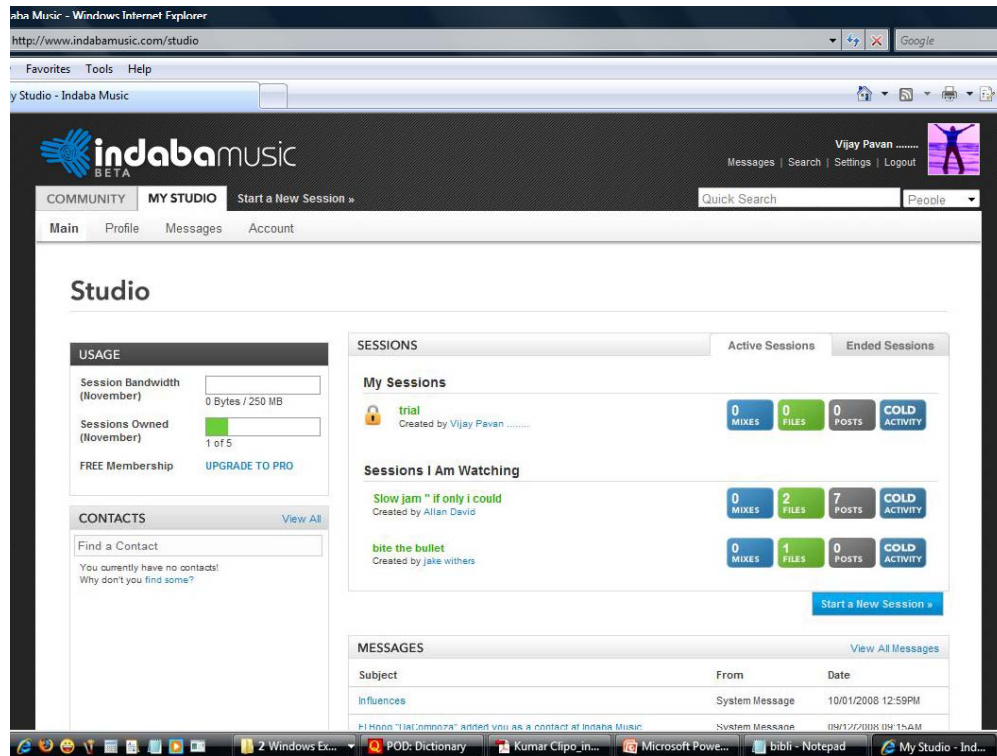


- Aim is to promote collaborative creation through internet but not online jamming and social networking through music.
- Blog based interface with limited members (55).
- Emphasis on creating original music, but limited to three languages.
- Amateurish level expertise is must to become a member.
- Membership is the prerogative of the founder.
- Blog helps in spreading information to members and nonmembers.
- Music files are received through email and will be modified by composer/founder as per the requirement.
- So far four albums were released successfully.
- Content is free for anyone to listen and download.
- Content is protected under creative commons license.



Existing social networking platforms on music

www.indabamusic.com



- Aim is to promote collaborative creation through internet with online editing and online sessions.
- Social networking is inherent and text messaging is very prevalent.
- Information is divided on two tabs; one for Community space and other is My studio space.
- Very bland interface on the lines of face book.
- Western based but no restrictions on genre and language.
- Sessions are supposed to be online Jamming sessions but happened little or never happened.
- Groups are like communities but not bands and are of no prominence at all.
- Mentioned about business making through online editing and session competitions but little happened in reality.
- As of now usage is limited to file sharing and scrapping.

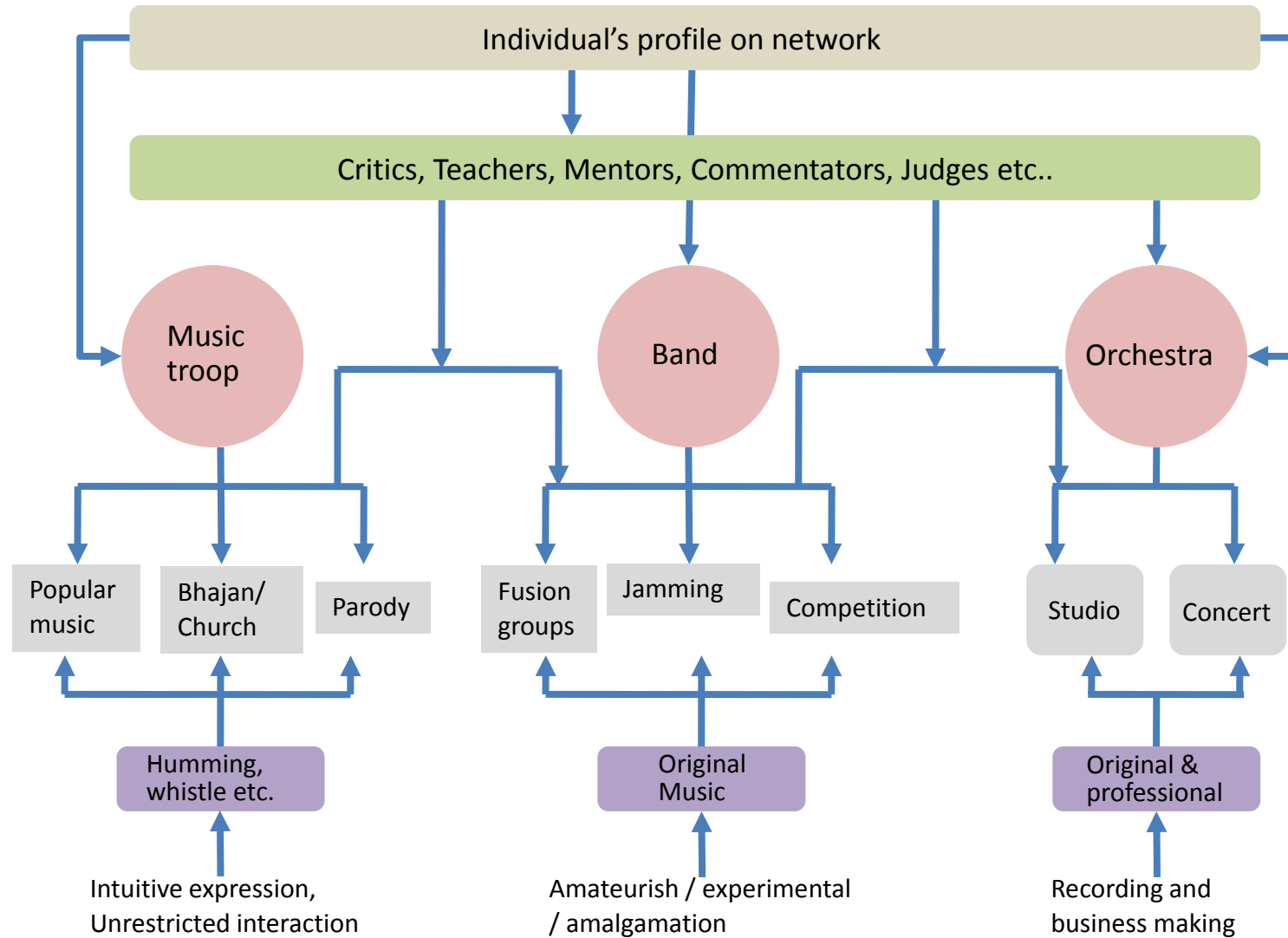
Design goals

- To build an intuitive sharing and creating mechanism for music
- To blur the boundaries of physical, linguistic and cultural dispersions in sharing musical interests
- To provide opportunities to express through music which goes beyond blogging and sharing
- To provide scope for improvement of peer talent across all domains of musical life with the scalable networking technology
- To provide a socially conducive environment for experimenting, editing and collaborating with different genres and social structures of music.

Design objectives

- To leverage social networking's ability for an individual to express without feeling undue anxiety or fear of rejection.
- To leverage social networking's cross over ability to allow its users to cross over into different domains without reservations.
- To form bands across all genres and in between genres to create new forms of music.
- To use real world entities as online connecting elements among different expert levels of music to create virtual networks among them.

Conceptual frame work for social networking on music



Conceptual frame work represents the structure on which the concept is based in terms of social networking.

The different social groups mentioned here would remain with their character but in implicit manner on the platform.

All groups need to be treated with equal status and the connectors will be the key elements on the platform to help scale the network for an enthusiast / amateur.

How the music is built

At Jamming sessions



A typical jam session in progress at IIT Bombay's music room

At a jam session, all participants have to group at an enclosed location. Each one of them will be performing on an instrument based upon the role she/he is intended to. Mostly jamming happens after lyrics have been acquired for a song.

Based upon the mood of the song and related discussions among the group, tempo and tune of the song are finalised. Chord represents the structure of the song. Pattern of chords determine the mood of the song. Chord can either be played by guitar or by percussion. Music is not linear; hence there is no definitive structure in creation which is applicable to all types of jam sessions. As the practice continues, the participants interplay their instruments as per the tune and till the desired quality for the song and mood are achieved.

Jam sessions are very interactive within the group and hence same needs to be replicated onto the virtual platform with minimal controls. Controls should be provided in such a way to give equal opportunities to all members of the group and allow them to freely create music than to work on computer. Most of the controls that are required during a jam session are volume based and for intercommunication among them.

How the music is built

At recording studios



Sound studios are the places where music created by different musicians gets mixed and then the final form is achieved. This process is generally followed for music to be created for movies, albums etc.

As the digital technology made deep inroads in the music domain, the need for all musicians involved in creation of a musical piece to meet has been erased and a digital console on a software does the mixing or merging of all individual tracks at a later time. This also gives scope for sound engineer to engineer the musical bit created. His task can be better said as to put the sound in correct perspective in terms of frequency, pitch, volume and tone etc.

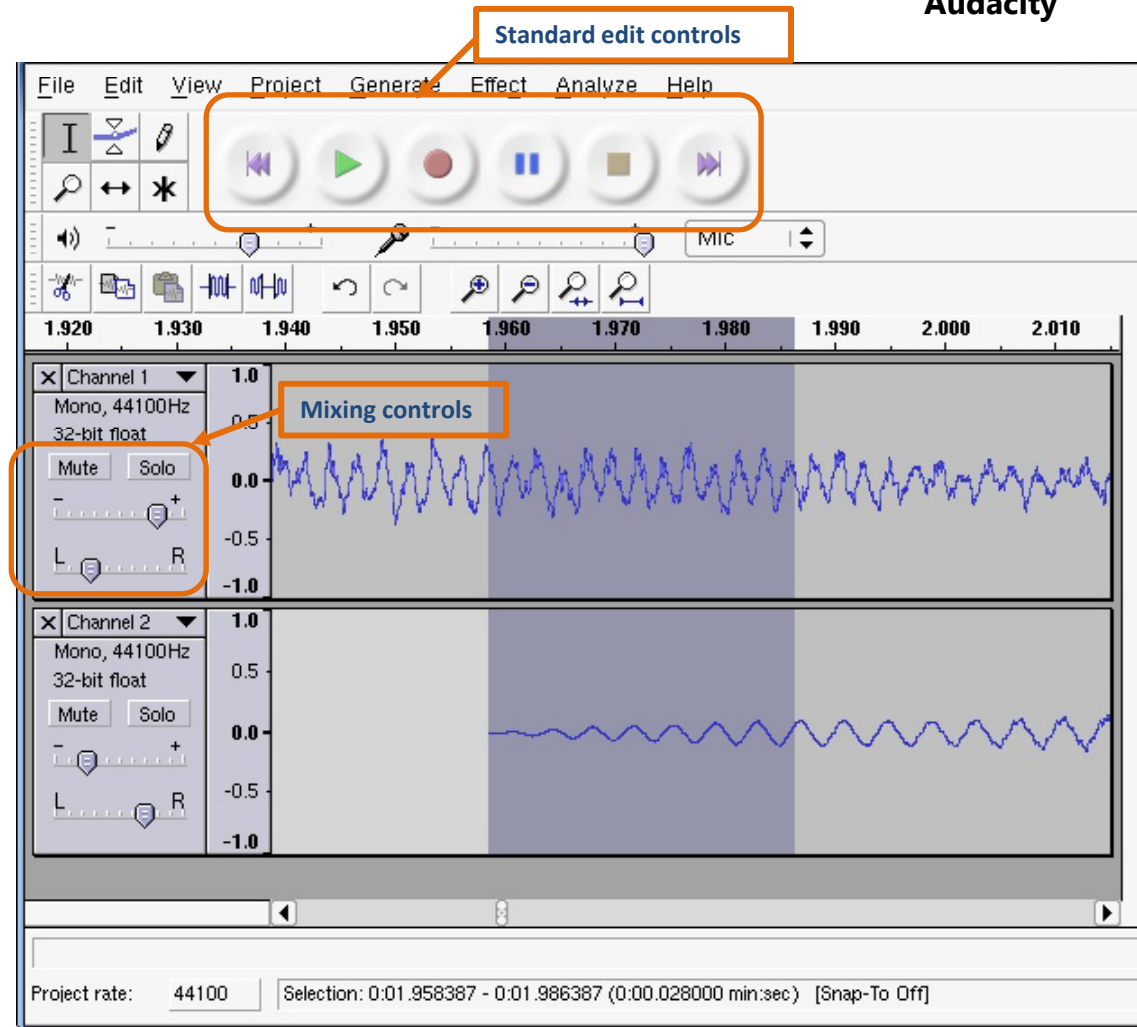
The present platform is an attempt to use similar technology for web, where the individual tracks are mixed while during creation only and with an added ability of social networking.

Hence attempts were made to study, practice and analyze the existing sound editing/mixing software, which are much in use among amateurs.

Note: The process explained here is not applicable in general to all forms of music creation. This is done just to get an idea about technical requirements in editing/ creating music.

Available music mixing software

Audacity



Audacity is rapidly becoming a favorite among amateurs who practice different forms of western music.

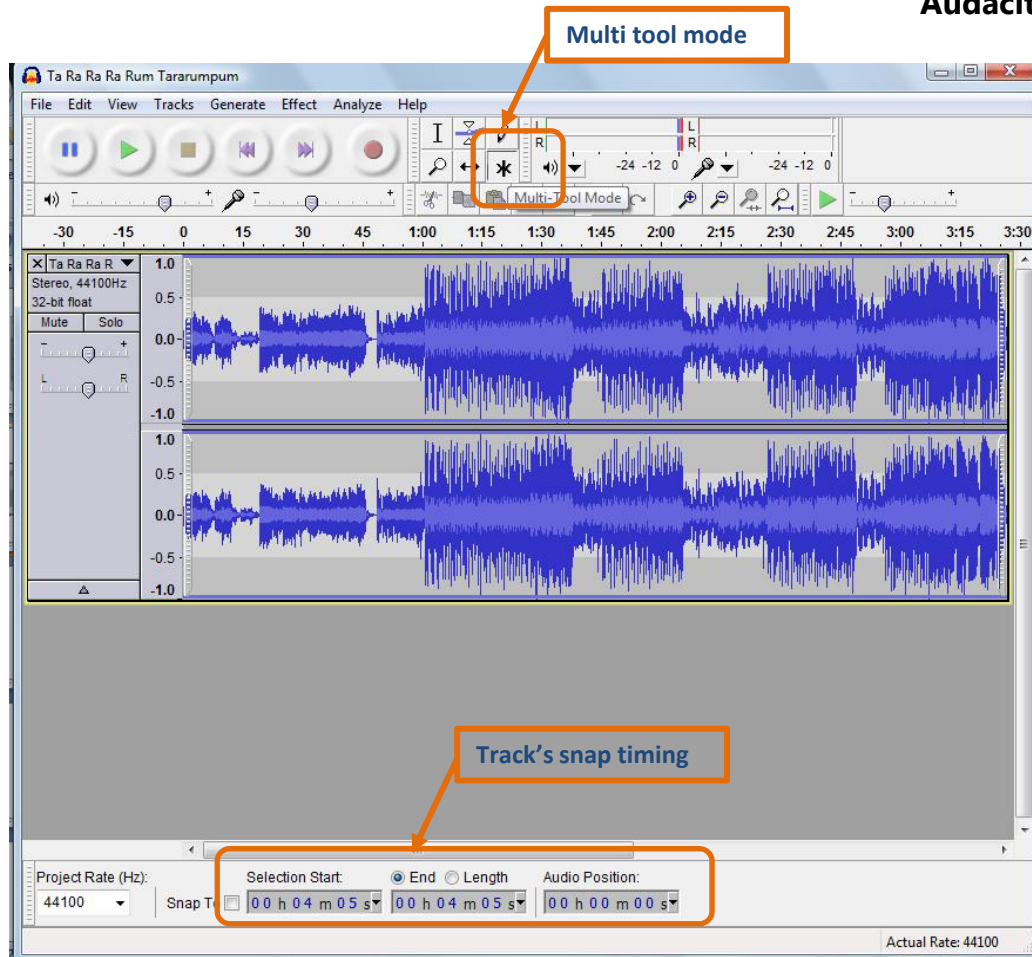
Audacity is a free, open source audio editor that works on all known existing operating systems. The simple and clean interface is the main reason for attracting beginners as well.

On audacity one can edit sounds using standard tools like select, cut, copy, paste and records features and can mix tracks and can apply effects to the existing recordings. Zooming into the waveform for clear understanding of the tracks is also given. Time shift helps in moving a sound clip (one or more bars) here and there within track.

It does not show separate mixer console, few tool bars on the software layout itself do that job. Tool bars for mixer include adjusting the volumes on sides and values of input and output volumes. Each track has buttons for Solo, Mute, Volume adjustment and format adjustment modes.

Available music mixing software

Audacity



The Audacity's most interesting feature of all is Multi-tool mode. In that mode the functions of standard tools change as per the cursor location on the track.

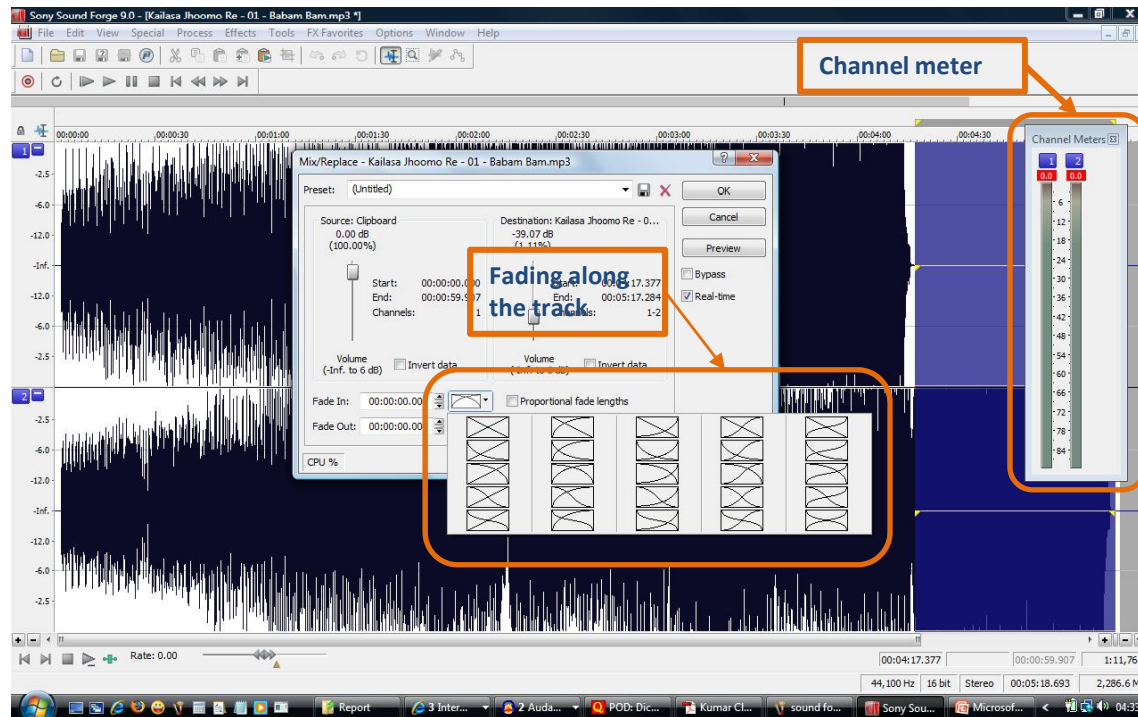
There is no limit to number of undo one can do and the software maintains the history sheets of operations for every editing done.

Although mixing of several tracks is theoretically possible, slight time lag between the tracks appears if a tracks is edited in between the mixing process. This is a coding problem. It also does not show tracks in different colours which is actually required for better identification of tracks. Even the effects can be played on one track only at any point.

Audacity may not provide higher professional quality of sound but helps in deleting the noise that is occurred in creation for any individual track. Many young podcasters are using audacity for their samples and hence it is already moved in for social networking generations.

Available music mixing software

Sound forge



Sound forge is a paid and advanced software for audio editing. It has been there in the usage by professionals for quite some time and the present version 9 is jokingly called as “Photoshop of Audio” because of the plenty of features it provides for users.

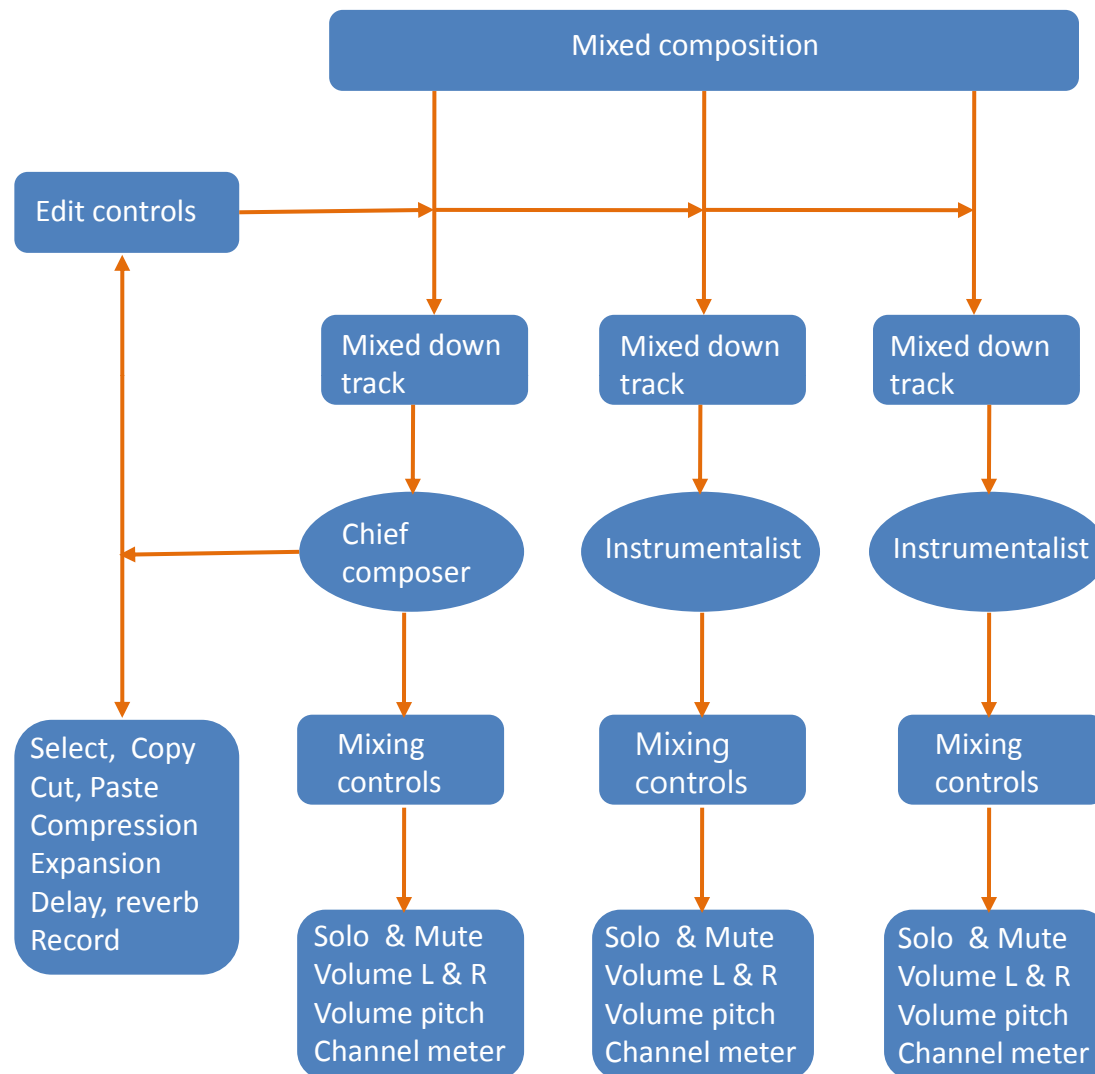
The sound files can be drag and dropped on this for editing. The very layout of the software is customizable as every window is a dock window and can be snapped any where on the screen as per the user’s choice.

Each track comes with the features to control the volume on left and right sides and with the curvilinear effects to fade along the track at any given point. Fading effect means either to slow down a track or lessen the pitch with a certain effect at a point on the track. While a track is being played channel meters display the frequency levels of the tracks, which helps in understanding the specific pitch of a tone at that moment. The user can decrease or increase the volume at that point on the track.

Other standard features include select, drag, cut, copy, paste and zoom are in single location but are applicable to any track.

Mixing console design

Information architecture & Insights



The platform needs to have a console where multi track mixing and editing of individual tracks can be done.

In operation, the mixer controls needs to be given importance than edit controls because easy possibility of mixing is key to initiate on line interactions.

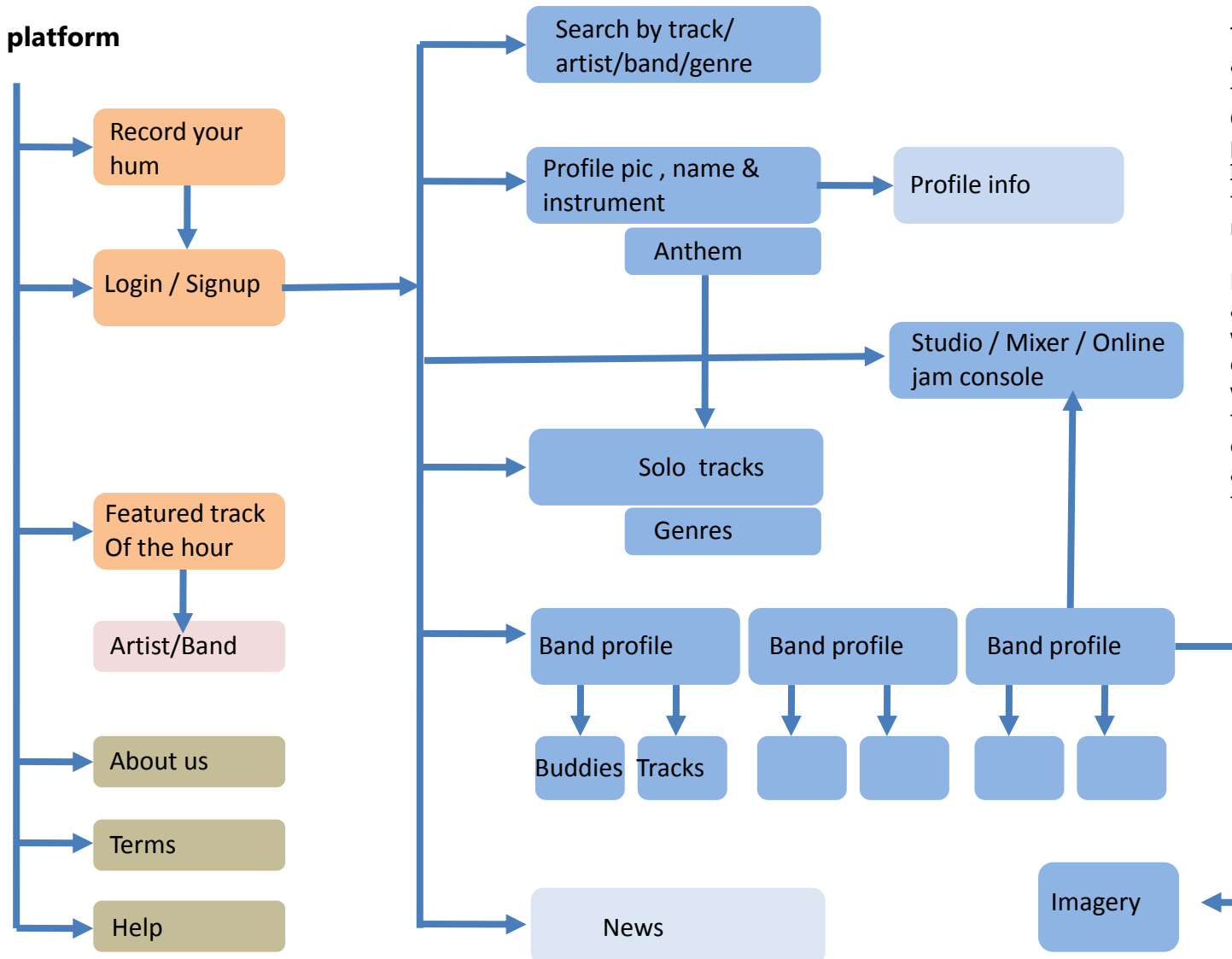
The controls for mixing include

- Clear identification of track's instrument and the musician playing
- Information about the session's tempo
- Options to Solo / mute for any track
- Volume adjustment on left & right sides and pitch for each track
- Channel meter for each track
- Cursor location
- Markers on track to identify and edit specific locations later
- The mixed file shall always has to be available online with it's skeletal view of the composition.

The editing controls are standard ones like cut, copy and paste and are common controls for all tracks and only one person shall have rights on all edit controls while the session is on. This prevents misuse of edit controls and chaos during the session.

Information architecture for network platform

Web platform



The information architecture is drawn from the inferences of Conceptual frame work of platform (page no.28) and Information architecture for Mixing console (page no.33)

Based upon this architecture several wireframe drawings were done. Objective of this wireframes is to resolve the complexities observed in Singo as well as to suit present framework.

Ideation

Concept 1 : Letzjam

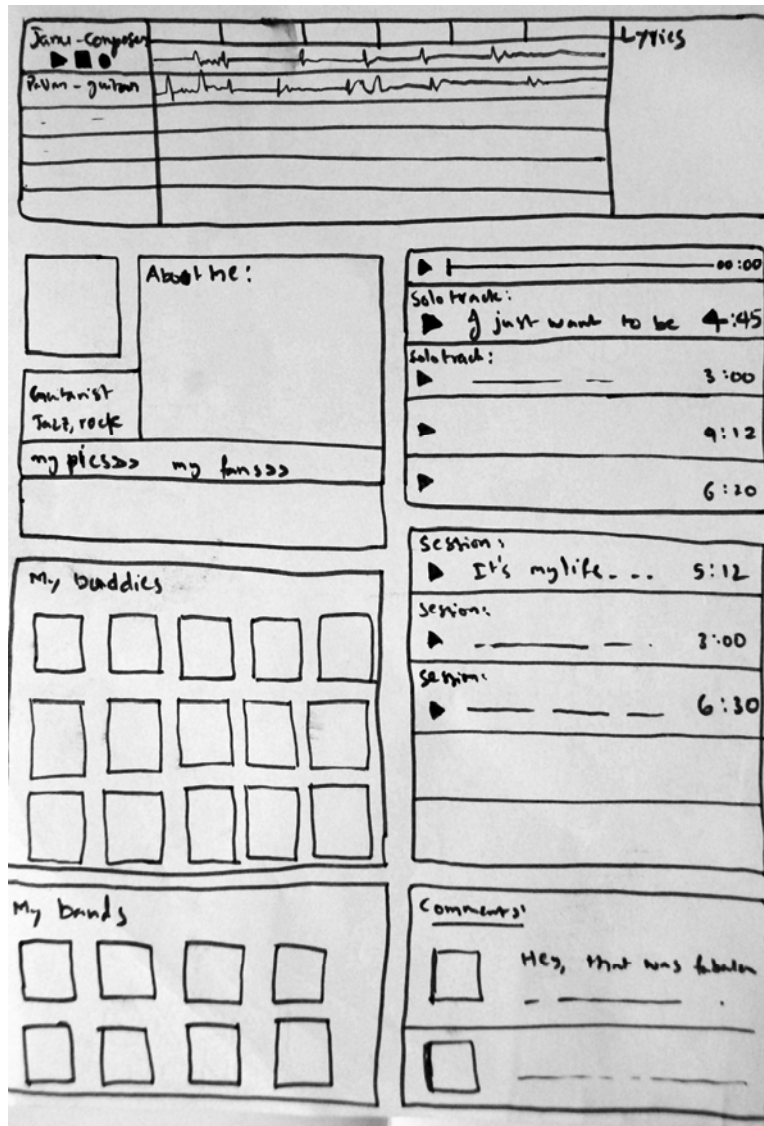
This concept is modeled to reduce the complexity in arranging media elements. It has distinctly classified spaces like personal space, shared space and network space. The studio is positioned on the top of the layout in such a way that it does not have to refresh every time the user is visiting other profiles on the platform.

Personal space includes
About me, music interests , my favourite track and link to pictures.

Shared space – Music files and comments.
Music files are classified only in two ways. One section is for solo tracks created by the user. Solo tracks means these are looking for contributions from other users on the network.
Second section is for sessions, which has mixed compositions from different tracks played the user and his buddies..
The thirds section in this space is reserved for comments to the use which is shared open on the platform.

Network space lists out the contacts the user is enjoying on the platform and are accessible through the visuals. The space also includes list of bands the user is engaged with. This kind of arrangement is a familiar one for present Orkut generation.

The major problem is too much information on one single page. The direct connection between a song and the associated users is not clear until and unless it is played in the studio.



Paper prototype of **Letzjam.com**

Ideation

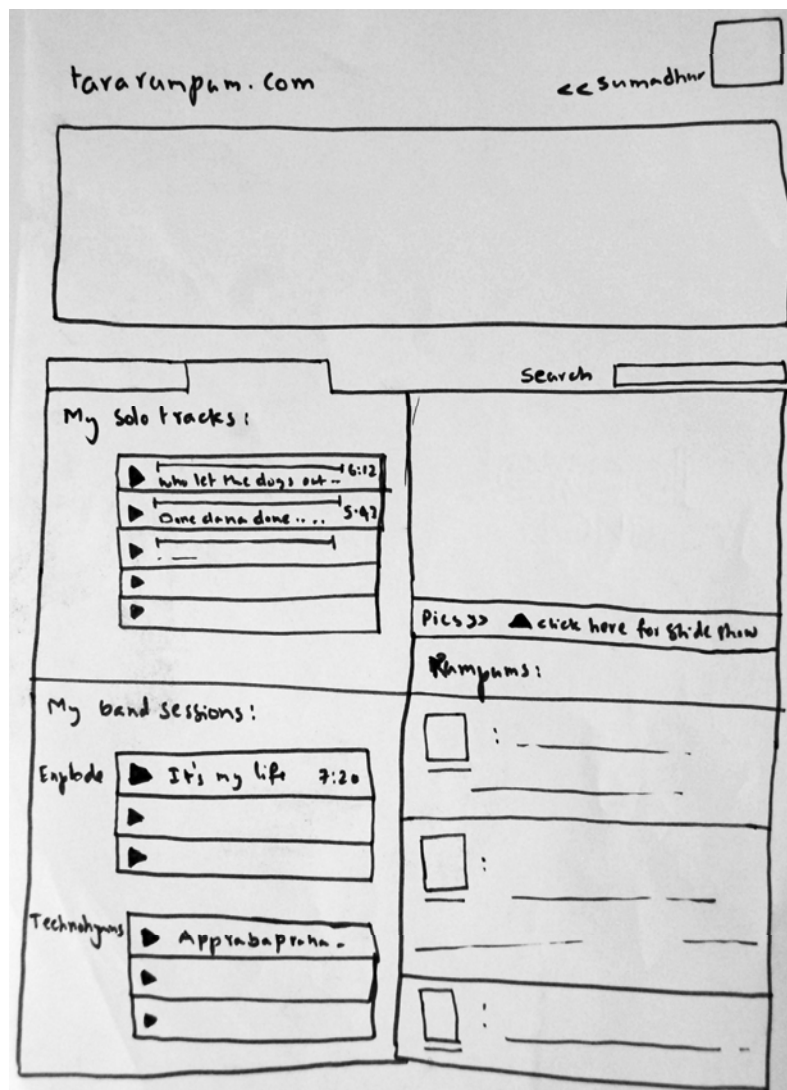
Concept 2 : Tararumpum

This arrangement has further reduced the complexity by giving two different pages for Shared media space and network space. The two space are accessible through alternative tabs.

Personal space is minimized and the user is identified by the one profile picture and name located at top right corner.

As the users desire to express themselves through photographs, the space for imagery is given to run slideshows of pictures associated with any track. While track is played in studio, slideshow of linked pictures can be seen by the profile visitor. Static pictures in the album are accessible only to the profile owner.

As there is extensive commenting is observed among users in existing music based social networks, the space for comments is continued in this idea as well.



Paper prototype of **Tararumpum.com**

Ideation

Concept 3 : Musiometry

This concept has its roots in geometry and hence the name is a mixed word from two fields. Music is itself is an mathematical arrangement of different sounds .

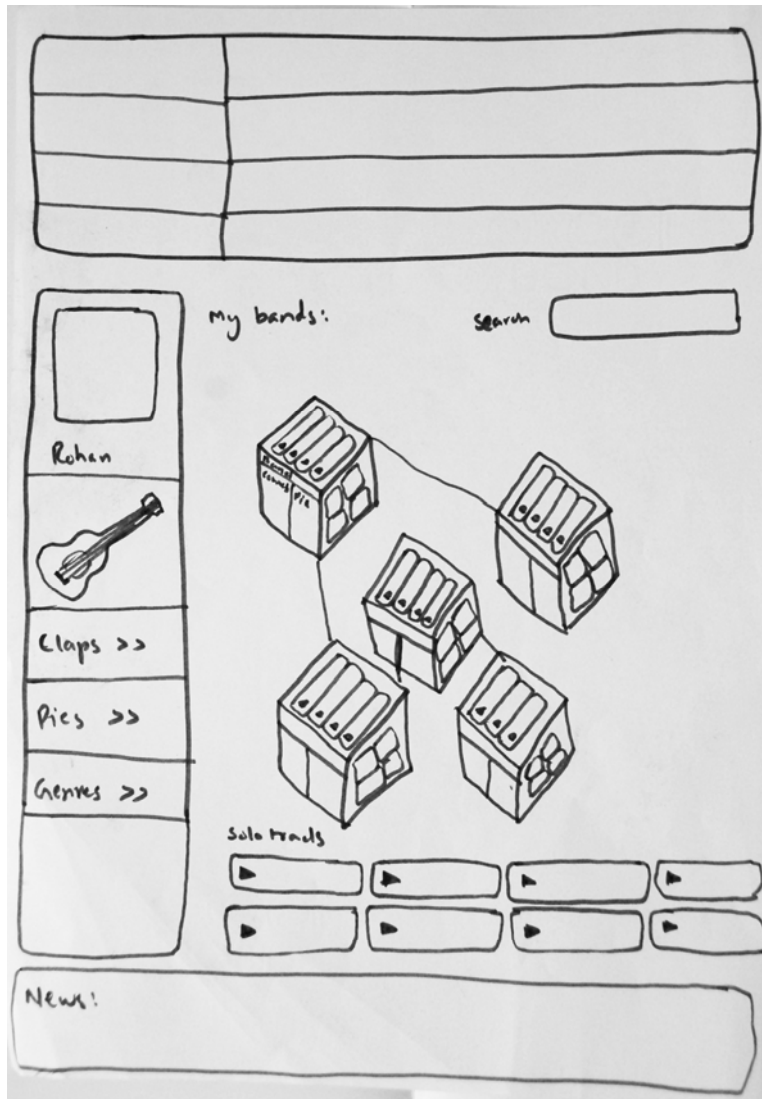
The problem of linking the music tracks and associated users is resolved here by representing the group performance in the form of a cube. The three visible sides of a cube display music tracks created by group on one side, group members on second side and access to pictures and related comments on third side.

The cube can be animated around itself to see one side at once clearly. If a track is selected in a cube, it plays in the studio displaying all the mix downs/contributions from the members of the cube.

The cubes are connected at some points if they have some thing in common like belonging to the same genre or more than two members in common etc. The cubes space is a common space for media sharing as well as for network. The space is a dynamic one in which the position of cubes keep on changing as per the activity among them.

Solo tracks are arranged at the bottom of the layout and each one has a player interface within it to play then there only without having to look at studio.

The personal space has enhanced position and size. To make chatting secondary to music making, comments (here claps) are accessible to the profile owner only through his personal space.



Paper prototype of **Musiometry.com**

Ideation

Concept 4 : Hum2jam

This arrangement is an enhanced version of previous three options and resolved many issues.

Instead of cubes group performances are designed as clusters consisting information of tracks and members in a more intuitive way. The comments about tracks are hidden and are accessible by the profile owner only.

The clusters remain dynamic by displaying their status on the network in terms of their position in the layout.

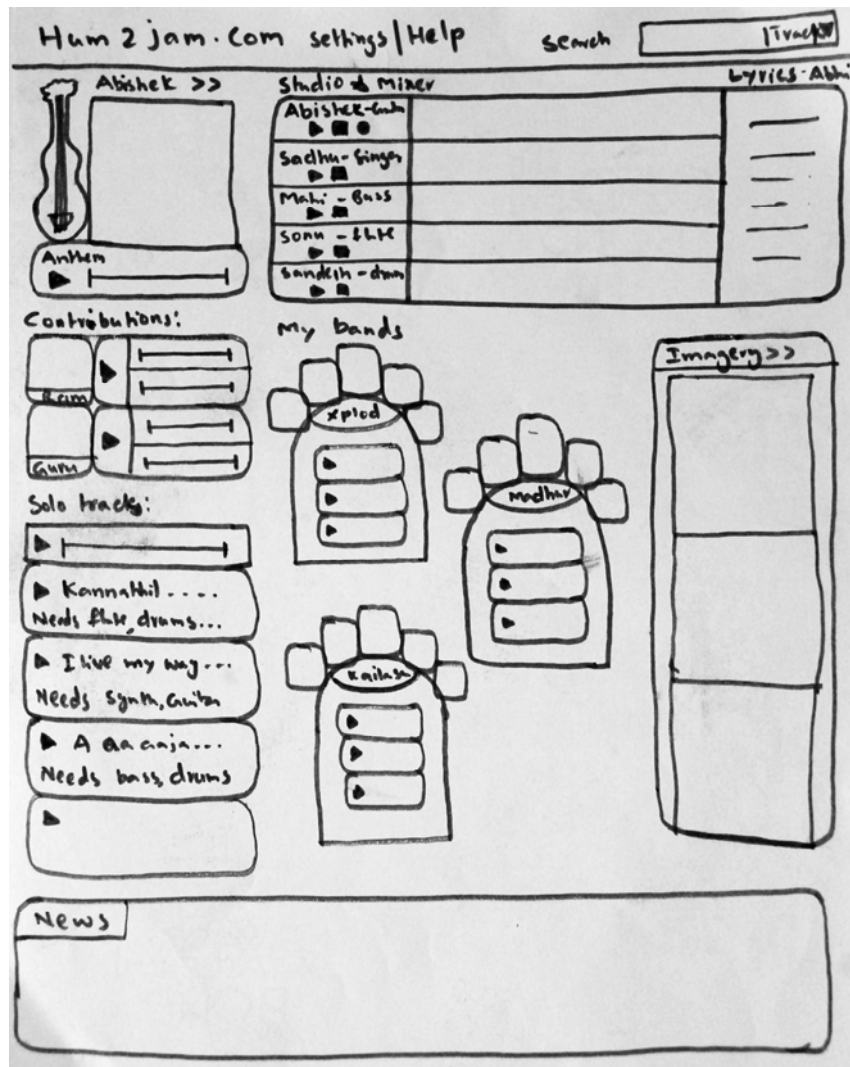
The solo tracks are displayed on left side with a common player. If the user receives any contribution for his tracks, they will be updated on the screen along with contributor's picture and link. If the profile owner accepts it and agrees for further collaboration online they can form a cluster and do online jamming.

The information about the profile owner is displayed at top left corner. There the screen displays a profile picture, her/his name, instrument she/he plays and an anthem. Other details about the profile owner as accessible through a scroll open menu by the link beside name.

To retain the possessiveness about studio, it has been kept as My studio, whose features can be changed from profile to profile.

Imagery and news sections are optional and can be closed down if the user does not want them in the layout. News is accessible only after login into the platform.

The name is selected to signify at one stroke what a profile owner can do on platform i.e., humming to jamming.



Paper prototype of **Hum2jam.com**

User studies on redesign

The four layouts are shown to users who have musical interest and who regularly participate in social networking. They were explained about the project concept prior to the test.

Users were requested to think aloud while browsing through the paper prototypes and hence the intuitiveness of the prototypes was tested. Users imagined and explained about how each would like to interact with the platform during the test.

Out of the five users, two voted for 'Musiometry' but suggested to change the name. Three other users voted for 'hum2jam.com'.

The screenshots of '**hum2jam.com**' were further developed for exploration and for building the prototype.



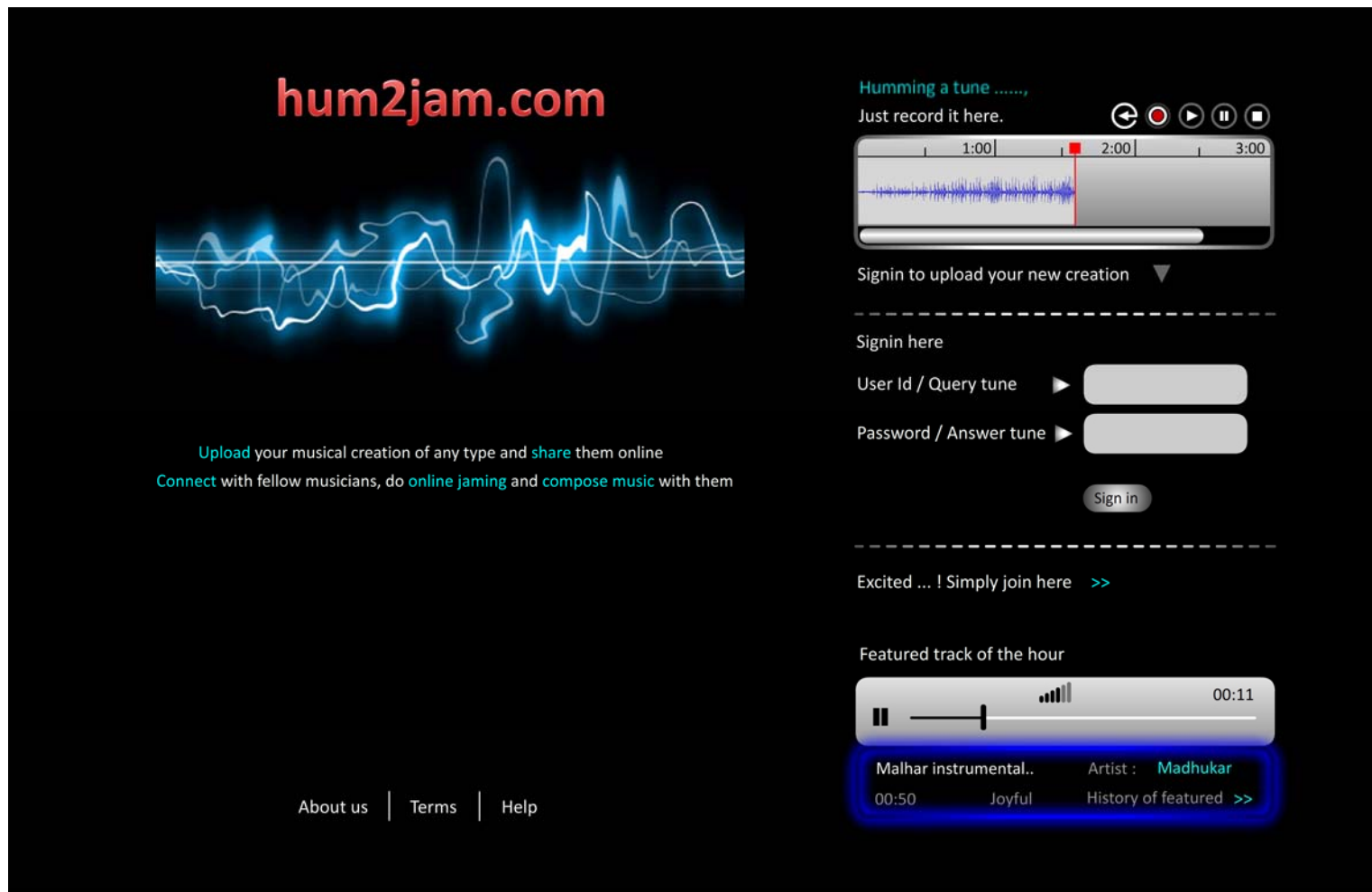


Design : hum2jam.com

In the subsequent pages, design of new platform is explained in following steps.

- Design :**
- Homepage
 - General profile page
 - Scenario
 - Nomenclature
 - Mixing console & controls
 - User details & Track details
 - Mixed downs & Albums
 - Online Jam session
 - Ancillary features

Design : Homepage



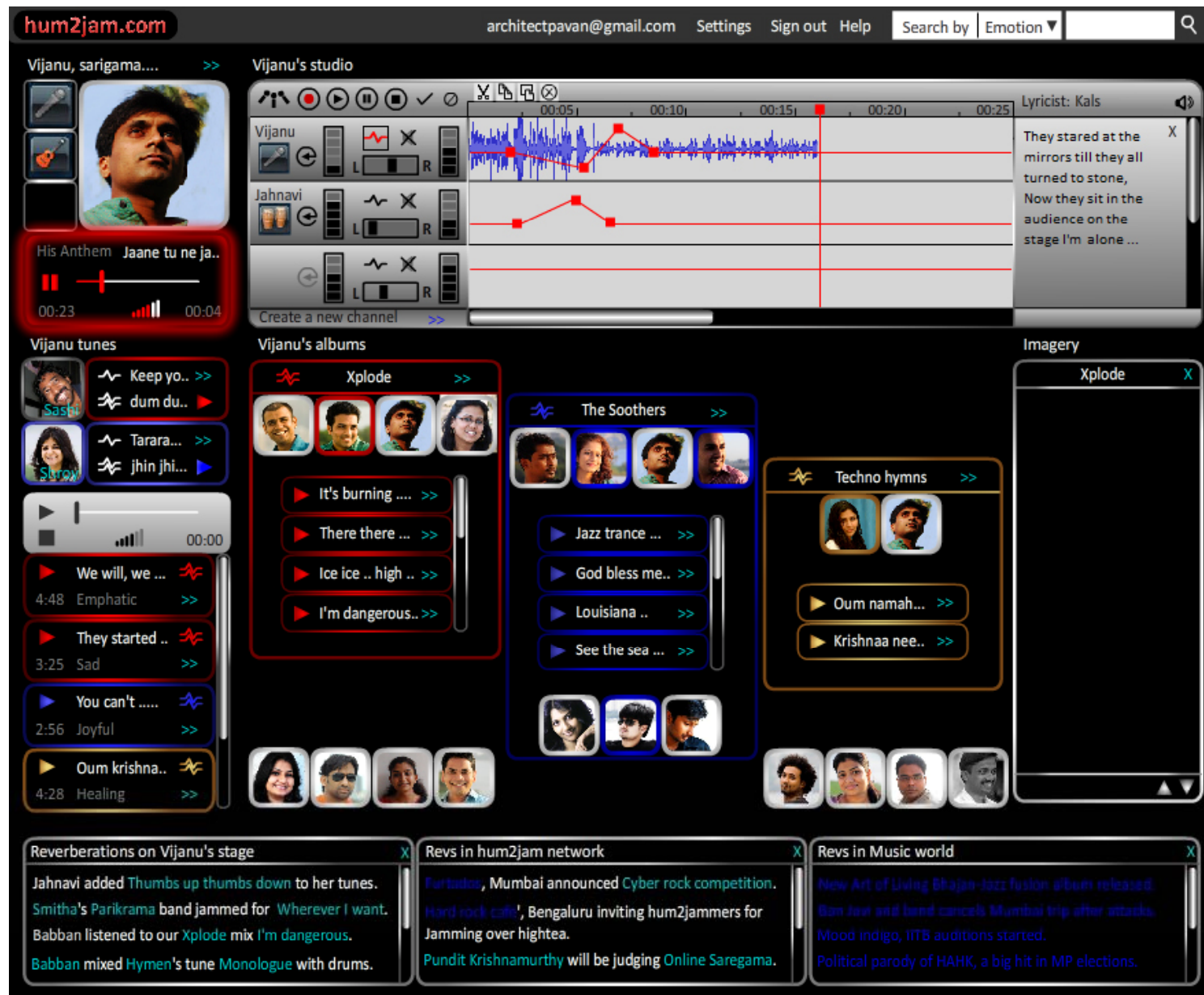
This is the homepage of the proposed platform with which user's stint with online music creation starts. Here, black back drop is used to give the feel of musical atmosphere of a concert.

On first page users can record any of their intuitive creations like a hummed tune, a whistle blow and a play of hands on desk etc., without having to login to the site. The site dynamically displays such options enticing users to do such tasks.

Users can also login into the platform using music itself as their id and password. This is possible by selecting few tones as pairs while signing up.

Note : This screen shot is modified only to show both 'Recording' and 'Featured track play' in functioning mode in one single image but these two functions are not operable simultaneously.

Design : General profile page



This is the screenshot of a profile page displaying several features of the platform. Tracks, albums are associated to different colours and each colour represents the genre of music the piece belongs to.

Genre classification is not done by the platform itself. As many amateurs interpret very differently from each other about genres, platform only associates colour for a genre given by the user. This is done to retain the democratic nature of the platform.

Bhajan groups and parody tracks also can be genres to make the platform more culturally relevant..

Next pages detail out the different features of the platform through a scenario and explain the process of function.

Design : Scenario



Abhiram, an upcoming singer from Mumbai and leads 2 bands (Fire & Ice and Darkest blues) on virtual network. He is mostly inclined towards rock music but loves to participate in fusion sessions involving old Indian instruments. He is on lookout for new friends with such talent.

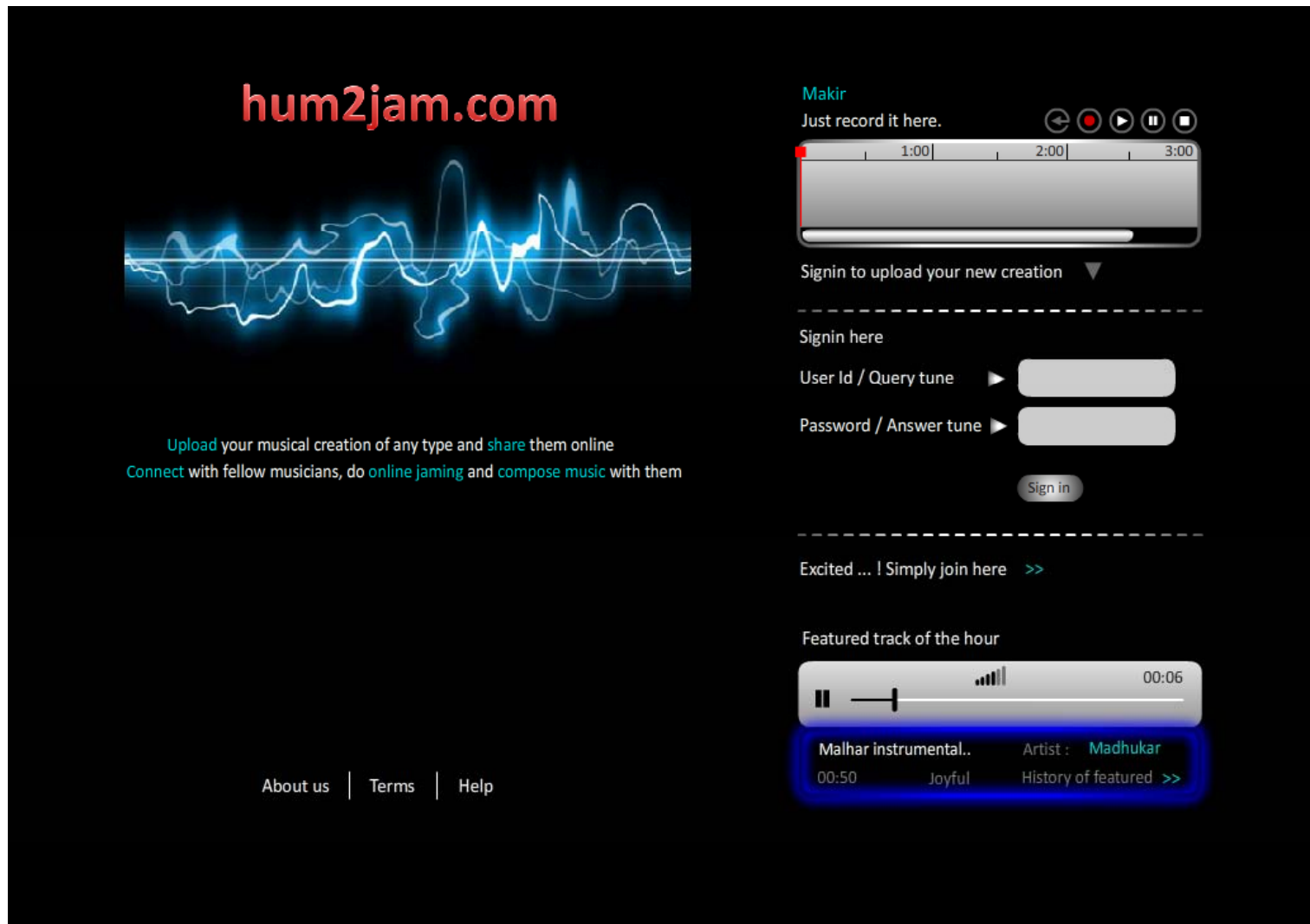


Madhukar, a BPO employee based in Hyderabad is an exponent of instruments like Santoor and Mandolin. He wishes to experiment with his skills by collaborating with several forms of western music.



KDr, student from Delhi and is an enthusiastic beginner on drums. He vigorously participates in social networks online and plays regularly in his college fests.

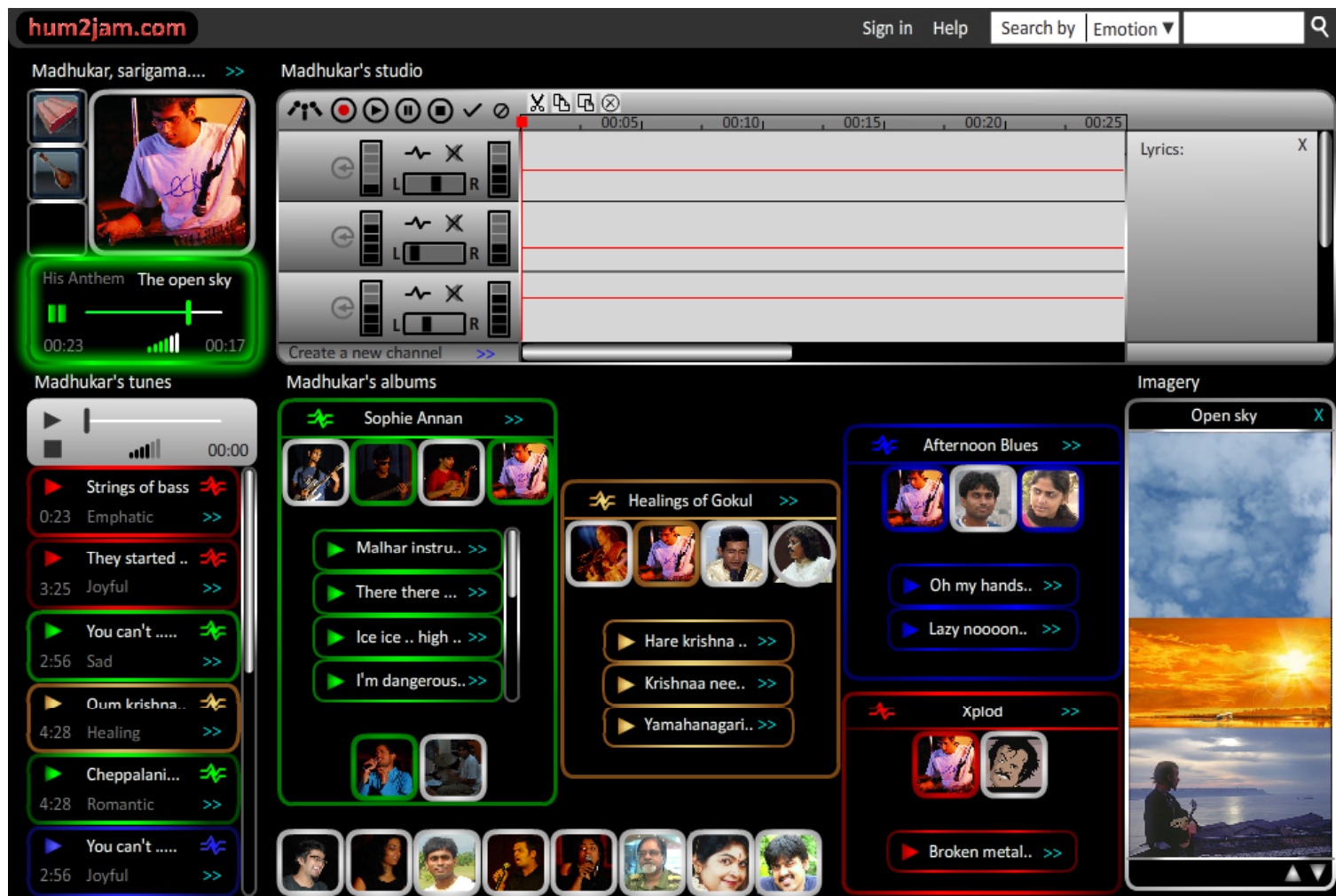
Design : Scenario



Abhiram, opened the homepage of hum2jam.com and is impressed by the 'Featured track of the hour' – *Malhar instrumental* from Madhukar's profile.

This piece is a mix of mandoline and other instruments and hence Abhiram is particularly interested.

Design : Scenario

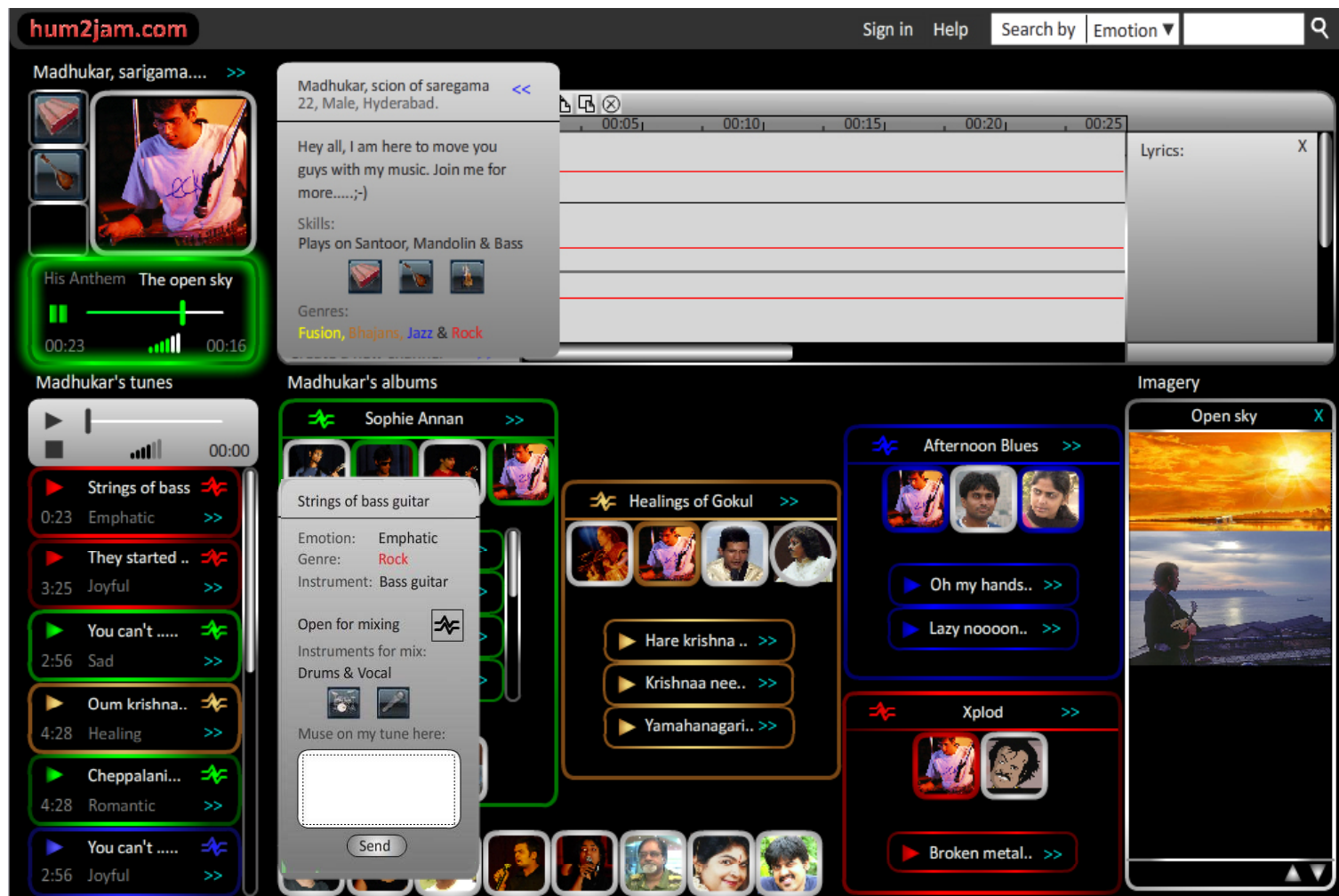


Abhiram accesses the Madhukar's profile page (without signin) from featured track. At first he wants to know more about Madhukar.

Madhukar's profile displays more of his fusion and classical flavour and he is already part of four bands out of which two are new. His anthem 'Open sky' gives a soothing experience of fusion to Abhiram.

Abhiram learns that Madhukar has many friends as audience (who are not part of any band) as well.

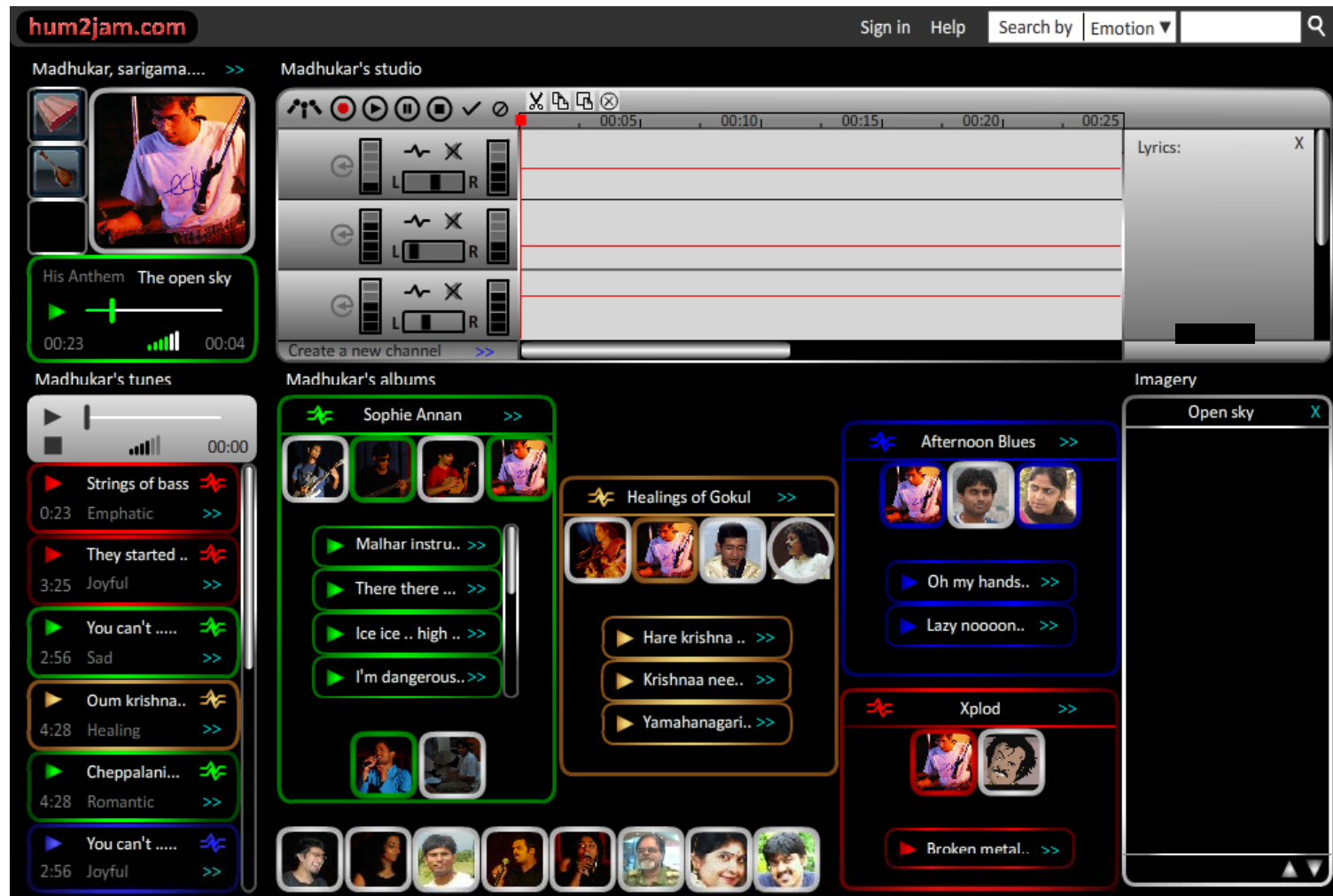
Design : Scenario



Profile details of Madhukar like 'About me', Location, skills etc., are accessible through subtle links on the profile page.

Madhukar had kept few tunes open for mixing (contribution) and out of them two belong to Rock (*Strings of bass* and *They started*) for which Abhiram wishes to contribute.

Design : Scenario



Abhiram finds the featured track – *Malhar instrumental* in Madhukar's album *Sophie Annan*.

Sophie Annan is a fusion band (Green colour) with six members and they have composed more than four tracks on the platform.

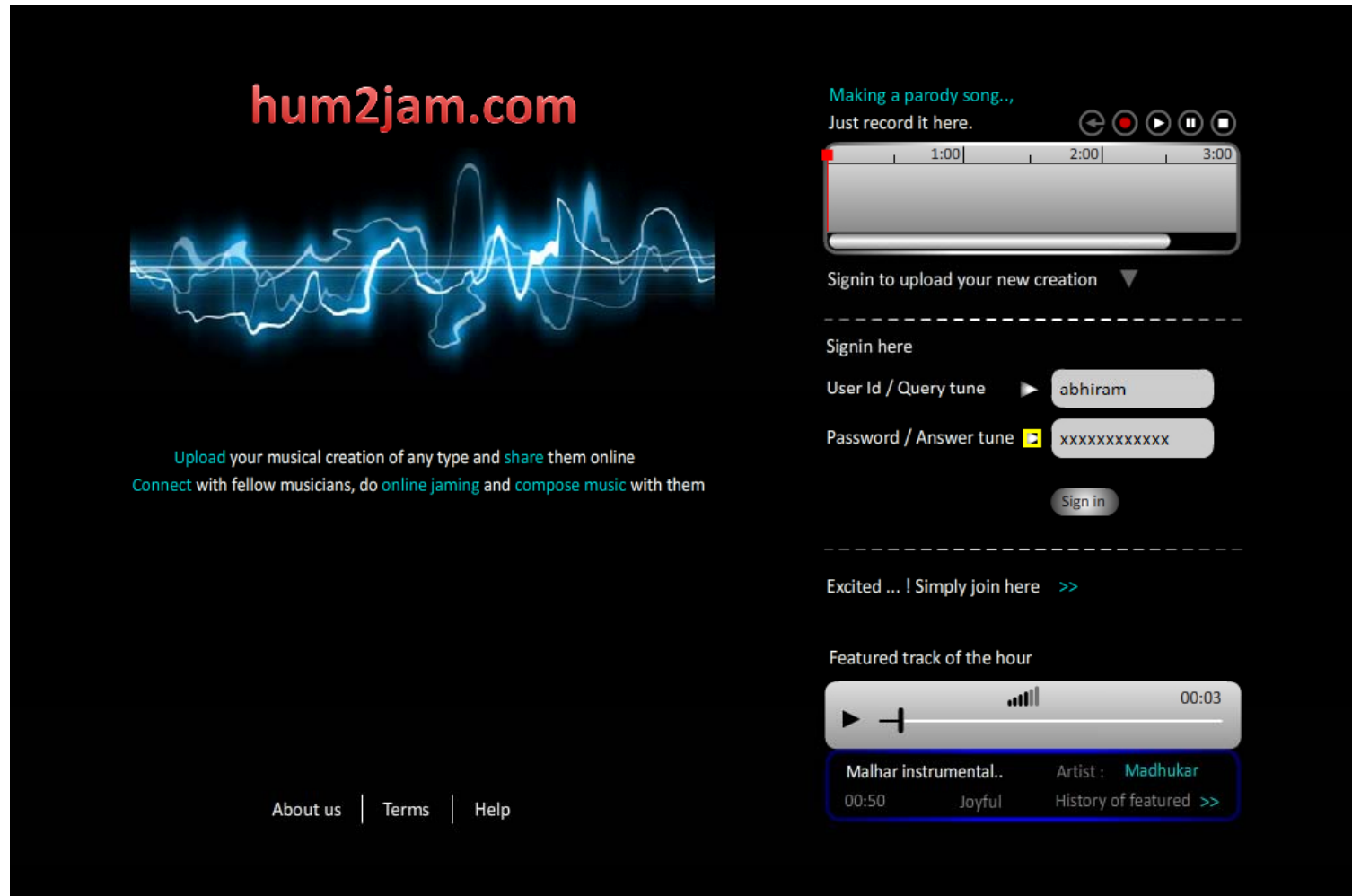
Design : Scenario



On playing the *Malhar* piece, all channels of the track are displayed on the console with their respective instrumentalists.

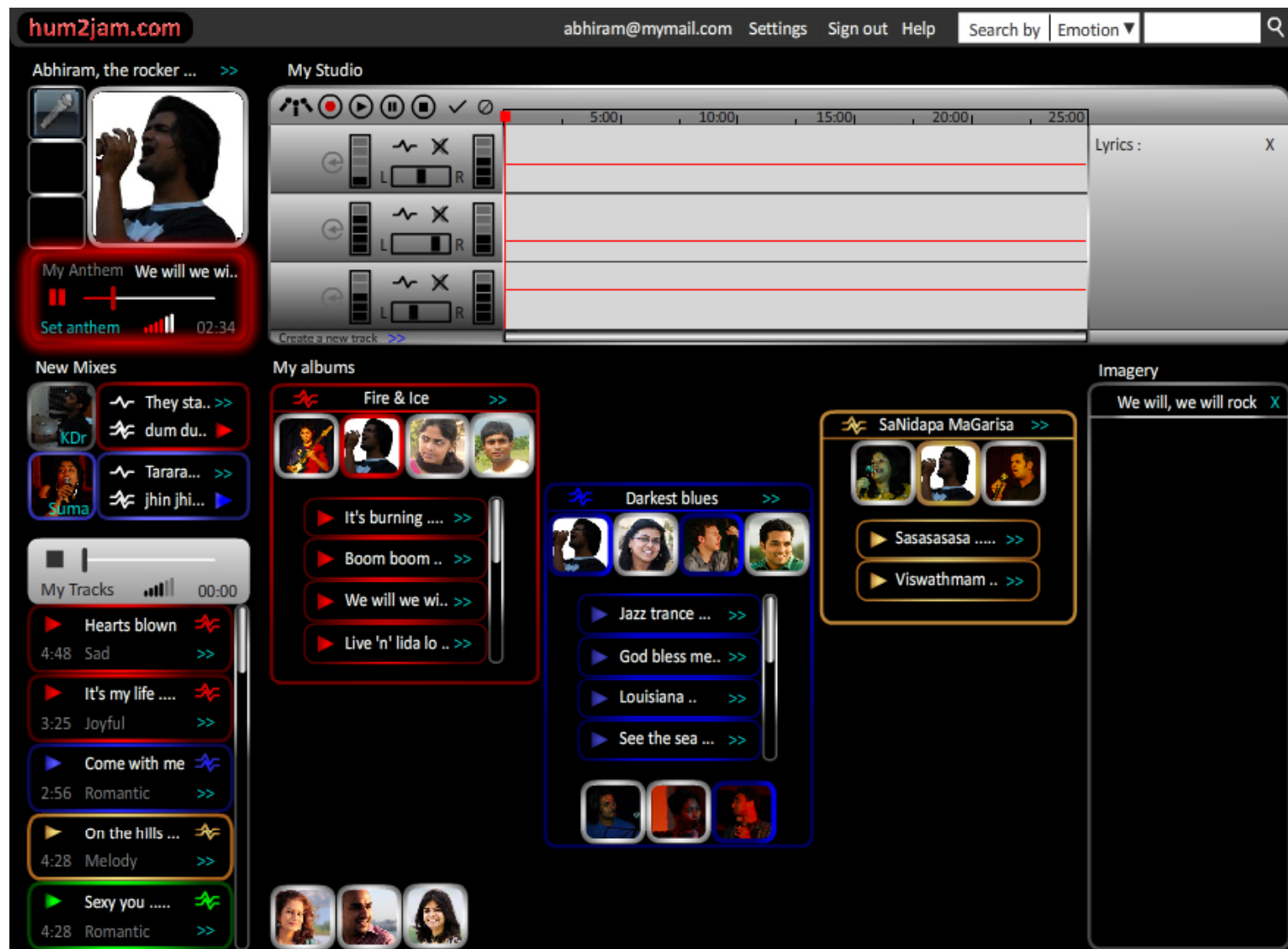
Abhiram checks each of them separately by using Solo & Mute buttons on the console.

Design : Scenario



Now, Abhiram being confident of Madhukar's skill, has decided to contribute to him and goes back to homepage to Sign in.

Design : Scenario



Upon landing into his own profile, Abhiram sees two new contributions by KDr & Suma for two different tunes of him.

Before contributing for Madhukar, he checks the piece by KDr.

Design : Scenario



Studio console displays the both the channels created by Abhiram and KDr.

KDr contributed with his drums to the original vocal score of Abhiram for this track.

Lyrics for the track were given by Janu and that might have helped KDr to understand the essence of song.

Design : Scenario



Abhiram listens to the mixed down completely and is impressed by the KDr's ability of creating subtle music through drums.

He accepts the mixed down by reaching out to the respective button on the console.

Design : Scenario



Acceptance of a contributed mixed down leads to creation of a new band.

As KDr was inspired the original vocal score by Abhiram, the control rights like giving a name to the new band and genre association etc., are possessed by Abhiram only.

Abhiram names the new band as 'Deaf metal' and puts it under Rock (red colour).

Design : Scenario



Abhiram later contributes to Madhukar and invites him also to join the *Deaf metal* and starts work on another track '*Keep your hearts*' with the team.

He even changes his anthem into a Jazz number '*It is the time for love*' and enhances his audience base.

Design : Scenario

The screenshot displays the hum2jam.com web interface. At the top, the header includes the site name, user email (abhiram@mymail.com), and navigation links (Settings, Sign out, Help). A search bar and a dropdown menu for 'Emotion' are also present.

The main interface is divided into several sections:

- Top Left:** A profile section for 'Abhiram, the rocker ...' with a video feed and a 'My Anthem' section showing 'It is the time ...' with a 'Set anthem' button and a 03:56 timer.
- Top Center:** A 'My Studio' section featuring a multi-track audio interface. It shows three tracks: 'Abhiram', 'Madhukar', and 'KDr', each with a volume slider and a waveform. A central timeline with a red playhead is visible.
- Top Right:** A 'Lyricist : Janu' section displaying lyrics: 'Keep your heart pounding ...', 'Keep your mind baffling ...', and 'Keep your hand shivering ...'.
- Bottom Left:** A 'My tunes' section with a list of songs including 'Hearts blown', 'It's my life ...', 'Come with me', 'On the hills ...', 'Sexy you', 'Trance-fusion', and 'Sleeping on ...'.
- Bottom Center:** A 'My albums' section showing three album covers: 'Deaf metal', 'Darkest blues', and 'Fire & Ice'. Each album has a list of tracks and a 'Create a new track' button.
- Bottom Right:** An 'Imagery' section with a video feed and a 'Keep your heart ...' button.

Abhiram, Madhukar and KDr have come online simultaneously at mutually informed time to jam for the track "Keep your hearts pounding ..".

The three connect their instruments to the computer (Abhiram with Mike, Madhukar with his electric mandolin and KDr through mike and amplifier for his drums) and starts Jamming by clicking on the main button on the console.

Whatever they play, discuss or chit chat during the session is recorded and can be edited later. Entire session is kept audible for lyricist Janu as well.

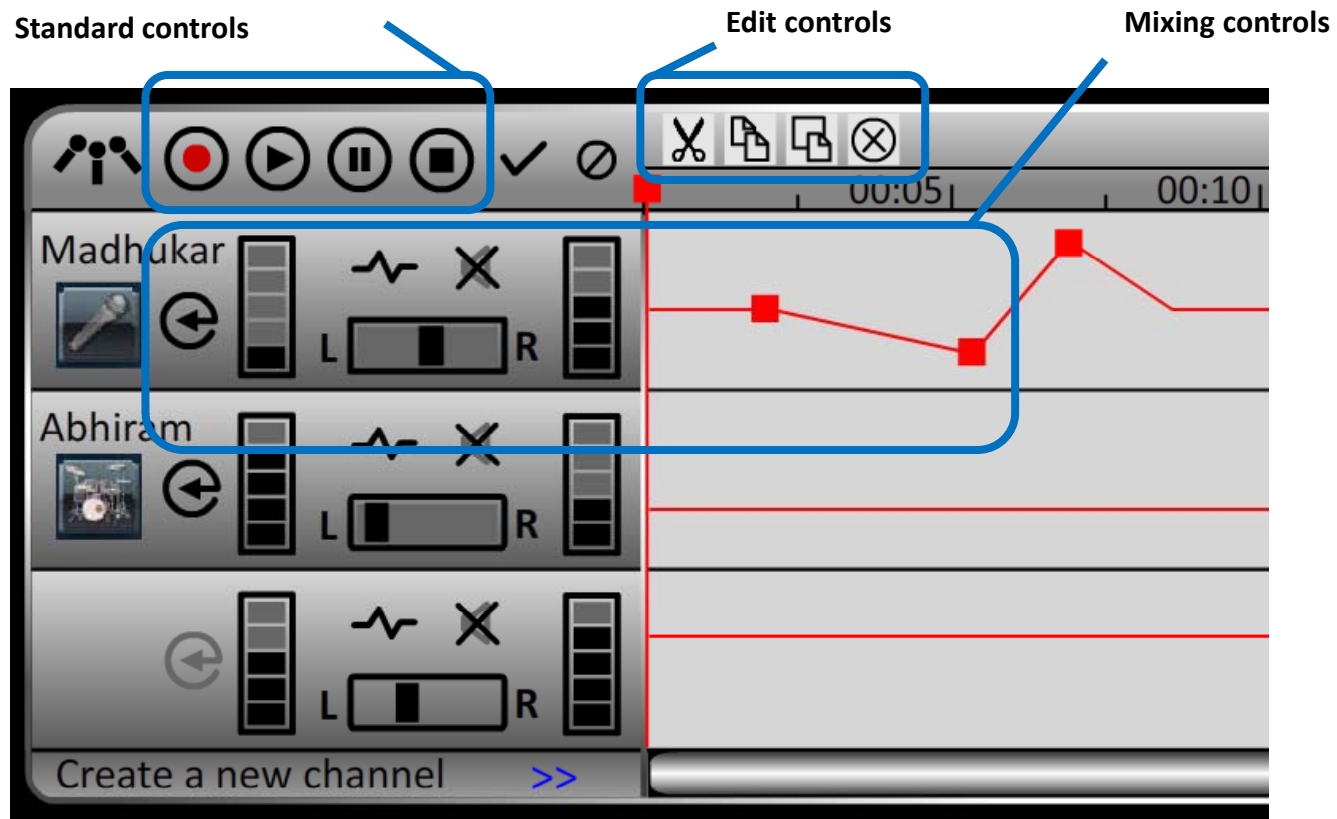
If the participants are satisfied with the outcome, the new composition replaces the existing track in the same album and is kept open for further mixing by others any time later.

Design : Nomenclature

hum2jam.com	- URL/name of the platform on which one can do right from Humming to Jamming
Jammy	- Individual account holder
Stage	- Individual's profile
Studio	- Mixing console / mixer
Anthem	- Most favorite characteristic own tune/track of a jammy, which plays continuously at the background of his stage
Track	- Mix of tunes / mix of channels
Album	- Virtual band /troop with several tracks
Tune	- Musical bit played by one individual
Channel	- Musical component of one single instrument in mixer
Mixed down	- Mix received /contributed through others
Rev	- Reverberation, which means updates on platform & music world
Muse	- Comments towards a Jammy/track/tune
Echo	- Listener's pictorial expression while jamming
Imagery	- Slide show of pictures/graphics associated with any track/ tune
Featured track	- Randomly selected track to play per hour on login page, changes for every hour
Colour wheel	- Colour wheel for Genres to represent each Genre with a different colour and is accessible through Settings

(Users have freedom to choose the position/colour of their Genre on wheel with Rock-Red, Jazz-Blue, Fusion-Green, Indian Classic-Golden are set by the portal)

Design : Mixing console & controls



On / Off Jamming button



Accept & Reject buttons for a received mix

Design : Mixing console & controls



Button To play **Solo** for a channel in a mix



Mute button to apply for a channel in a mix



Visual feedback whether **the instrument is connected** to his computer or not (Prior to mixing)



Visual feedback to inform about a **listener's status**



Open for Mix indication for a tune / track/ album (Colour changes as per the Genre set by the owner of the original piece)



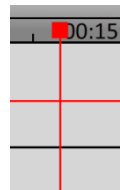
Channel meter to give visual feedback (Not a control) about changes in volume/pitch for a channel



To set the volume for a channel in a mix on **Left or Right** side. In general, treble instruments like drums on left and bass guitars on right.



Volume control with five ranges to set the mean volume for a track.

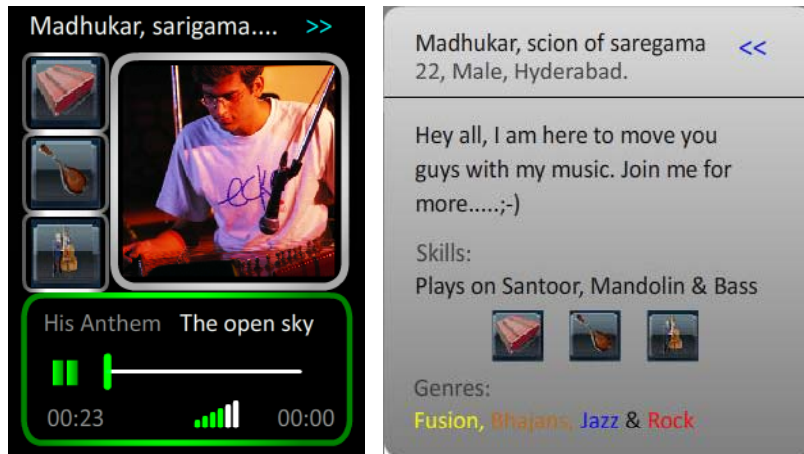


Cursor, which moves along the time line and wave form of the track. (Common for all channels) Helps in selecting a piece of track to edit.

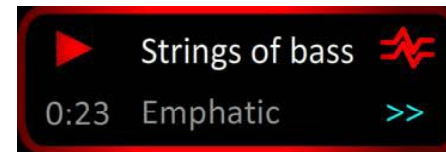


Pitch bar to change the pitch/intensity of a channel at a specific location as per the need.

Design : User details & track details



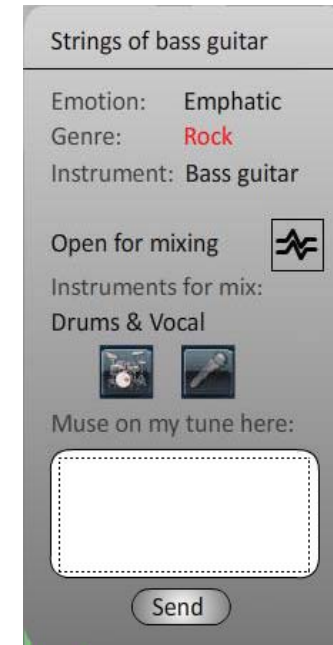
First display gives the name, picture, instruments he/she plays and Anthem. Details and his interested genres are accessible through the link.



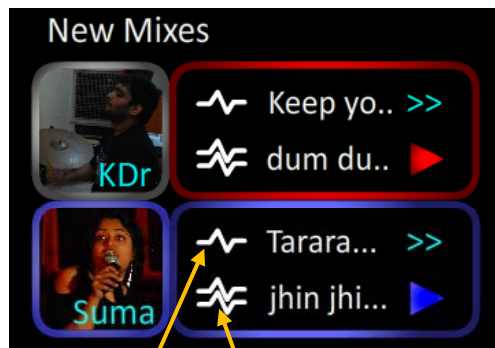
Each tune displays the name, emotion, duration, play button, open for mix indication/button and link for further details.

Colour represents the Genre. All tunes have a common player interface, which is different from mixing console.

Without login one cannot muse and cannot mix also.



Design : Mixed downs & Albums



Solo tune

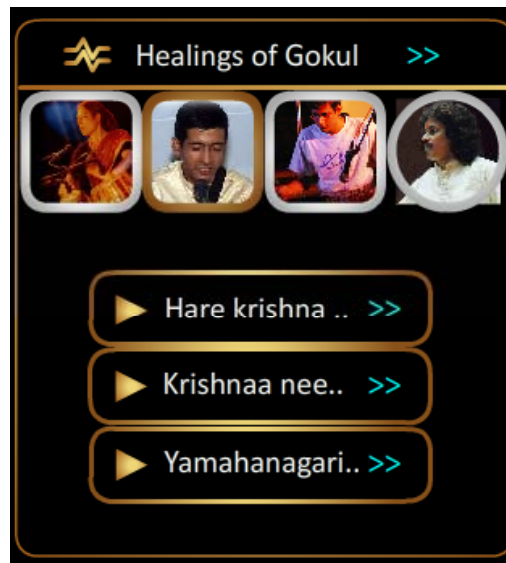
Received mixed down
For solo tune

New mixes are the mixed downs received from other Jammies for my tunes when I was offline.

They appear prominently only to the owner of stage and only after signing in.

Any new mix plays on the mixing console and after listening user can accept/reject them. Acceptance leads to new album creation.

Coloured square represents the Jammy online at that time.



Album is a cluster, represents the virtual band, its members and the tracks they created.

Jammies from diverse back grounds, different skill levels can take part in album creation.

Circle around the profile picture represents the Jammy as Synergizer (Connector), who can help building more connections for fellow Jammies.

Each track plays in studio showing every channel involved.

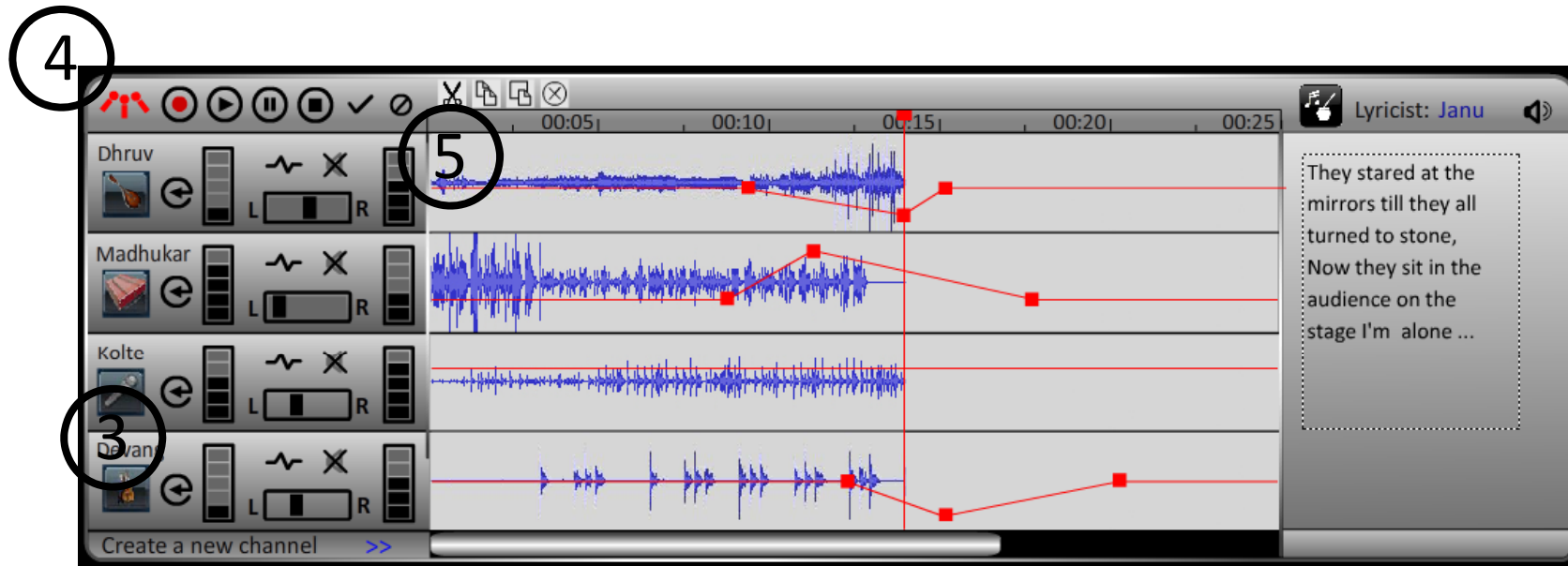
Design : Online Jam session



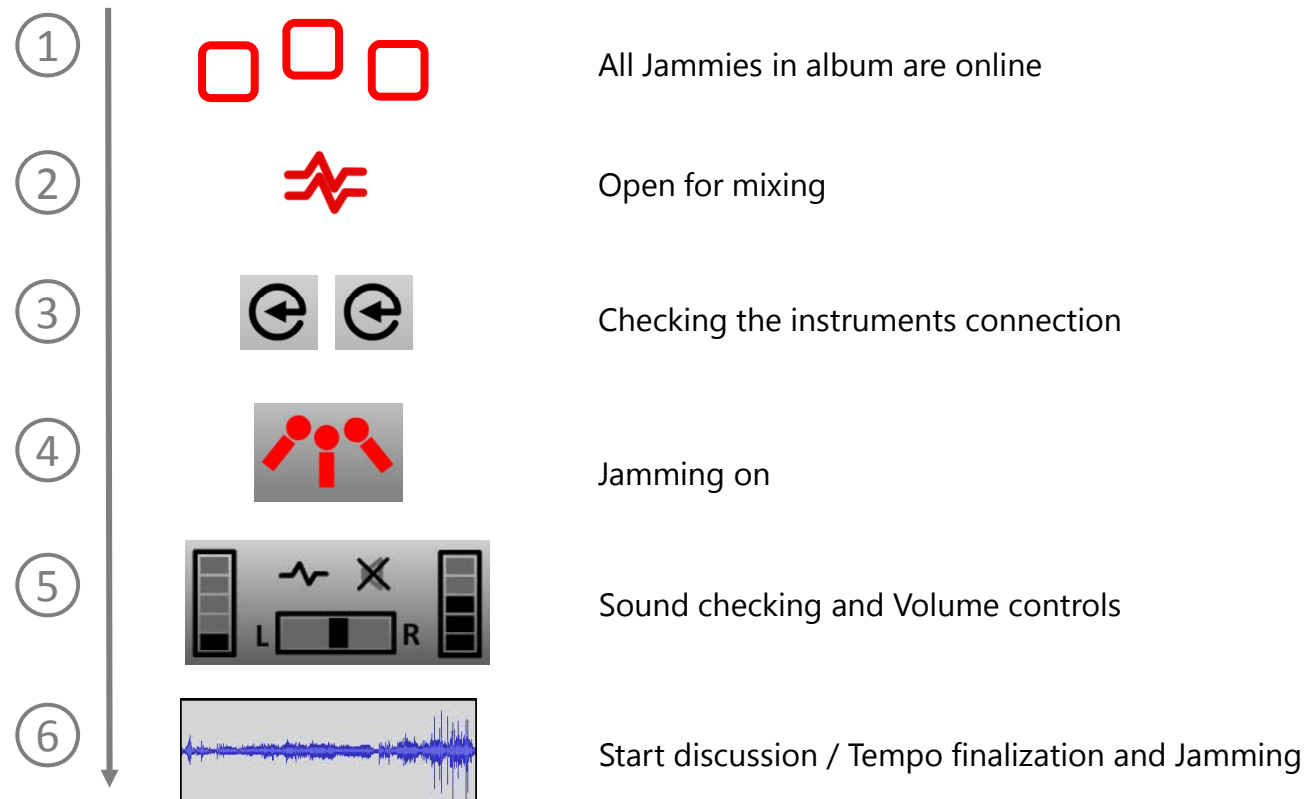
Online real-time Jamming can be done, when all the members of an album are present online.

One of them could be the main composer for the track, he clicks on Open for Mix button in album. All channels with their respective Jammies open up in console.

Then after checking their connection status jamming can be started. Lyricist or somebody else can listen to the session in parallel.



Design : Online Jam session



Control rights

- Main composer whose channel is the first one in a track will have all edit & mixing controls during the session.
- Other Jammies get visible feedback parallelly in their Studio about any modifications the main composer is doing. This is done with mutual discussion among the members.
- Other Jammies can alter mixing controls in their studio just to improve their own channel, but accepted track will be from main composer only.
- Accepted track adds to the albums of all Jammies participated in the session.

Design : Ancillary features

Search

Any Jammy can avail the search opportunity in six ways after signing in.

Track (Tunes also included)

Track through Emotions

Jammy

Album

Genre

Synergizer

Imagery

Pictures, Graphics can be associated to any tune/track. They play as slide show while that linked track is being played. This is an optional feature for a Jammy.

Revs

Reverberations are musical news classified in three ways.

Updates from stage

Notices, competitions on network

News from music world

all three are provided with relevant links to access.

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Mr. Eli Yamin, Jazz musician
Mr. CP Narayan, Karadi tales
Mr. Sekhar Kusuma, Sound engineer
Mr. Sajit, Musician
Mr. Aslam Khan, Charishma studio owner, Andheri
Mr. Ashwin, Programmer
Mr. Shailendar, Music composer
Mr. Bharat Navani, Artist manager

Prof. Preeti Rao, EE dept., IITB
Mr. Sachin Godke, IDC
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Mr. Ritsh Kolte, IITB
Mr. Girish Dalvi, IDC
Ms. Hanna, IDC
Mr. Arun, IDC
Ms. Aparna, Hyderabad
Ms. Sindhu, Hyderabad
and many others.



social networking platform to create music collaboratively

Guide : Prof. Ravi Poovaiah

Co-guide : Dr. Ajanta Sen

Vijayapavan Amaravadi

07633801

M.Des – Interaction Design

IDC, IIT Bombay

December 2008