Technical Feasibility of an IIT Mandi Community Radio Station in Kamand
Chapter 1: Introduction

Radio has been a major source of entertainment for the "aam aadmi" of India for quite a long time. The wide popularity of television in the late 80's carried away some people who glued their attention to radios and gave them a completely new mode of entertainment. Due to economic constraints, however, most people still could not afford the luxury of television. Furthermore, the issue with using a television was its limited portability, which the radio had no issue with. So, though television was getting popular, radio still did not lose its glamour.

The late nineties and the last decade saw an entirely different phase transforming the conventional feeling of a radio into a highly innovative one. Now there were big banner advertisements on radios, critical reviews on almost every small and big issue was telecasted, music, online reality shows showcasing public opinion, and game shows, all became a part of the radio world (reference no. 8 and 12).

Though a few of the radio stations became highly popular and though they targeted a major portion of the population, many small groups belonging to a particular locality or group can feel alienated. Consequently, during the mid-nineties an idea known as community radio station popped up, which was placed somewhere in between the commercial and public broadcasting radio stations. Worldwide, these are owned and operated by a particular community and are can be run as non-profit organizations. These stations create a platform for listeners to share their ideas and where their problems were also addressed (reference no. 12). Common problems of the particular locality or geographic area are taken up, music related to the particular community is played and social issues concerning the particular community are also taken up for open discussion and criticism.

These radio stations may have special relevance in areas of Himachal Pradesh due to large variations in culture and ethnicity depending on the listening audience (reference no 14). There are currently two community radio stations in the state, namely in Kangra and in Solan (reference no. 7 and 16). Those radio station are mainly broadcasting educational/ general awareness programs for their town residents (reference no 15). These two community radio station are in small towns and operated by private educational institutions (reference no. 7 and 16).

Community radio station has the potential to gain interest in Kamand and adjoining regions as there are no such entertaining stations. In this area, people have no access to radio. The general population of Kamand constitutes people engaged in small scale farming, shepherds, local transport businesses and government jobs. Local Himachali music, news, politics, and public service announcements on issues like alcoholism, or the importance of higher education can be taken up in these radio stations (reference no. 10). There are many geographical locations in Kamand which can be turned to good tourism spots. People from nearby cities can be attracted towards these places. The news about these sites can be aired. Thus possibilities of local tourism development also would get huge popularity.
The main aim of the project is to study the feasibility of setting up a community station, including identifying the target audience and considering the content of the programs that could be broadcasted. As local residents will play a major role in the operating of the station getting people together and taking up tasks will be major challenge.
Chapter 2: Literature Review

This chapter describes the background research we have done before starting the project fieldwork. Here we describe the project site, stakeholders, and background case studies.

2.1 Site Description

Kamand is a small village in Mandi district situated along the Uhi River. Its nearby villages include Katindi and Kataula (reference no. 17).

![Figure-1 Kamand village landscape](image)

Generally here people are living in group of 10-20 houses mainly belonging to same family (reference no 14). Kamand has a huge number of young children populations who mostly study in the local village higher secondary government school. Adult populations are mainly seasonal farmers, shepherds, doing low salary government job in nearby cities (Kamand village Panchayat). Official population of this village is 205(reference no 18).

There is also a community of students, faculties, guards, workers hoping to build the IIT Mandi on the banks of Uhl River (reference no-19). It now accommodates around 400 people. It will be greatly more than double in coming years.
2.2 Stakeholders

Based on the broadcasting range, it is expected that project will be affecting the people living in this region. About some hundreds of people are living around in the village and a few hundreds are living in newly established technical institution IIT Mandi (reference no 18). Then we have people travelling through this area, mainly the people living in the nearby villages like Kataula, Katindi, Navlaya (Kamand village Panchayat and reference no 17). We might also extend it to nearby cities of Mandi and Kullu if we consider taking it to a larger audience. IIT Mandi comprises of mainly Hindi speaking people while the rest of the target audience speaks a Mandyali language (reference no 14 and 18). They can also understand Hindi but the IIT Mandi community can’t understand mandyali Language.

Local residents

As our project itself is titled as Community Radio Station, the term community would be of major concern. Generally, the community has been defined as group of people living in a common geographical location. Through the various programs of interest, the people living in the local region would be having greater bonds and it will help in making strong relations between them (reference 1).
**Students and Staff at IIT Mandi**

The messages and notifications in the campus are communicated through emails and notices. There are various information which need to spread quickly but it is delayed as a result of lacking such facility. Due to such vastness of IIT MANDI’s campus news can be easily communicated.

**2.3 Potential community programming**

Our community can be subdivided into groups like male groups, female group, old person group, children group, literate group etc.. Requirements of radio programs for these groups can be different. Below, we discuss some community programs' for these target groups:

- **Women’s empowerment**
  
The programs will endorse women’s empowerment, progress and well-being by increasing awareness and discourse on gender-based discrimination and incapacitating barriers to women’s participation. Under this, programs promote discussion and increases awareness through the local community on human rights and political issues over the audio (*reference no 10*).
  
The radio programs will provide news and data on government activities, women’s and children’s health, psychological and reproductive health, family planning, gender equality, sex-based violence, harmony building and the environment. The local women can share their stories and experiences on air too (*reference no 10*).

- **Government agencies**
  
It would help in conducting various government programs and spread information regarding programs and policies. There are many NGOs which are working on variety of issues related to common people in this region, who can use this Community Radio Station in carrying out their services in public interest (*reference 10 and 11*).

- **Disaster management**
  
As the region is located in the mountains of Himalayas, the region is highly prone to landslides and other natural calamities. It many times affects the road transportation and causes problems like food shortage etc. In these situations, many lives can be saved by just spreading some essential information or processes which could serve them for their survival and community radio stations could be a very important source in such situations (*reference 2, 10, 11 and 14*).

- **Agriculture**
  
Community radio has the potential for agricultural extension to profit from the aspects of reach and the significance that local broadcasting can accomplish by using
Participatory communication methodologies. The importance of sharing information locally and opening up wider information networks for farmers can be explored with the specific dialect radio programs based on investigation of soil and water conservation. (reference no 12)

- **Youth guidance programs**
  It will help children and teens gain life skills. The programs will aim to provide workshops for youth that will encourage them to prepare for their future careers break negative habits and strive to be law abiding citizens (reference 10).

**Programs for IIT Mandi**

- **Talks and Seminars**
  Different talks and seminars by specialists in their respective fields all over the world is a unique feature differentiating IITs from other various universities. We could introduce the live broadcast of the seminars on the radio. So, that it can be heard from anywhere in the region.

- **Music and Entertainment**
  Apart from the tight academic schedule of students and the long working hours for faculty and staff, everyone likes to relax, laugh and enjoy. Music here will play an important role here, which will help in improving efficiency and working environment across the campus.

**2.4 Background Research**

In 1990s, as the government was working over legislation to facilitate the functioning of community radio in India, a few community-based organizations had initiated radio projects in rural India. They, in the absence of an independent license, continued to creatively engage in playing back of programs on a tape recorder or reaching the people through television cable. (Reference 15)

The Deccan Development Society (DDS), an NGO working with poor, rural, Dalit women in the Zaheerabad area of Medak district in Andhra Pradesh, set up a community radio station with assistance from UNESCO in 1998 (reference no 20). In the absence of a licensing policy, programs produced by members of the community were narrowcast through tape-recorders in the village sangams (autonomous groups of women). This CRS - Sangham Radio has finally gone on air on October 15, 2008 as India's first rural community radio after securing a license under the new community radio policy (reference 11).
The Kutch Mahila Vikas Sangathan, (KMVS), an NGO working with rural women on their concerns in the villages of Kutch, the largest district of the Gujarat state in western India, offers a different model for community broadcasting in India. KMVS built on its long presence in the area of doing development work and started airing a 30-minute sponsored Kutchi language programme on AIR's Radio Bhuj in December 1999 by purchasing a commercial slot. (reference 15)

Later many educational institutions started community radio stations. Some of them started these for professional training whereas some for cultural and mass general public awareness. Anna University, Chennai was first college of India to make community station in its domain (reference 11).

As these concept start gaining its roots in India, the government start paying huge attention to it on suggestion by UNECO (reference 15). They formulated the community radio stations guideline in 2006 (reference no 5). The detailed license procedure is provided by the Ministry of Telecommunication and Information Technology through continuous formulations. Indian government later formed ‘Broadcast Engineering Consultants of India’ technical group which provide technical consultations.

2.5 Case Studies

Community radio stations are running successfully all over the world now. Taking into consideration the varying altitude of the region, we might have to face some difficulties in setting up the Community Radio Station. However, some community radio stations have been established in the similar areas of Solan and Dharamshala (reference 15).

2.5.1 Hamara MSPICM 90.4 MHz, Solan

It was launched in 2009 by a venture floated by M S Panwar Institute of Communication and Management. It was the first Community Radio Station in Himachal Pradesh. The radio station is named as “Hamara MSPICM”. It has a range of 15 km in every direction around the station (reference 16).

The radio station focus on the developmental aspects of the local area. The content revolve around developmental issues of health, agriculture, employment, government opportunities, literacy programmes and life coping skills etc. They help in grooming professionals in broadcast journalism. Their radio station also serve as lab for their students to get hands-on experience in script writing, reporting and editing for radio thus exposing them to the real experience of working in radio studios/stations. They encourages the community members to participate in the radio by inviting them to speak on some issues in the programmes. They are involved in making the programmes, get voice-overs, help getting feedback from the community regarding the programmes (reference 15 and 16).
The broadcast initially started as 15 minutes feed on AIR Shimla and following the response from the listeners was formed in a community radio. The language of communication remains the local Pahadi, Bhagati dialect. The reporters contributing to the station are partially by the institute itself (reference 15).

2.5.2 Tashi Delek 90.4 FM

It broadcast out of the Tibetan Children's Village (TCV) in Dharamsala (reference 15). Its goal is to serve the Tibetan, Indian and Expatriate communities of the region with excellent music and timely local information. They also give guidance to next generation of broadcasters. The radio station which is the first of its kind in the exile Tibetan community is currently run with donated equipment and funds from donors (reference 7). The radio station also intends to tie up with local NGO's in surrounding areas which are in need of a community radio but can’t afford one. Besides this, young wannabe broadcasters will also be taught at the radio station.

Some of other colleges of India has also developed community radio stations. Here is case studies of those colleges.

2.5.3 Anna Community Station

Anna University is located at the heart of Chennai city which is media saturated (reference 21). But this part of the city has several slum clearance apartment tenements. The radio station is on the ground floor of the EMMRC building which is primarily meant as a higher educational media centre. The doors of Anna Community Radio are always open to the community members. The community people, particularly women, walk in to do programmes. Some of them are also trained in audio production and broadcasting. They themselves select the topic, prepare the script, find the resource persons and take an active part to give quality programmes. They even do the recording and editing on their own (reference 21).

Off-air programmes were also done in the community spaces. These include AIDS awareness campaign, swine flu awareness campaign, medical camps, pollution control campaign, and campaign on nutritious food for pregnant women. Feedback is normally got by phone-in programmes and engaging the communities in off-air programmes. Anna CR strives to provide radio programmes that are innovative and reflective of the diverse voices of community. They also provide music and information that is not covered by mainstream media. They strive to achieve perfection by involving the community for preparing the programmes, which are targeted to serve the very same community. Since the radio station functions as part of a UGC television production centre (EMMRC), production people with training in audio-visual production are readily available to train the radio staff and also to pitch in whenever there is a need (reference 21).
2.4.4 Vidyawani community radio station- Pune university

It was started in May 2005, the programmes on Vidyavani are focused on various departments on the Pune University, various students’ welfare schemes of the University, information about exams and results and activities of the University (reference 15). Various edutainment programmes which cater to problems of youths are also broadcasted. Due to technical reasons, the programmes played on radio could only be heard in a 7-8-km radius and for the past one year, the management had been contemplating ways to reach out to more listeners, especially students of 635 colleges in the city (reference 22).

They have grouped their programmes as following-

- Culture and Identity - Programmes like folk songs, classical songs, sentences, Jatyvaril Gaani, poetry, functional songs present by community members, Bharood - Bhajans, different instrument music etc.
- Gender Empowerment - includes programmes like women empowerment, female foeticides, laws related to dowry & violence against women, women's right to education, health related issues etc.
- Social Programmes - includes programmes like street plays, dramas, programmes on equality, discussion on various social issues, Bharrod, talk by social workers, right to information, energy saving, environment, disaster mgmt., non-conventional energy sources etc.(reference 22)

2.5 Summary

Based on primarily research, we found out ways how we can use the radio station to benefit the Kamand community. Moreover we understood the relation between different sections of our target community.
Chapter 3: Methodology

Our goal for this project is to analyze the ‘technical feasibility’ of Community Radio Station in Kamand. We have listed following objectives that we will try to complete sequentially to successfully and efficiently achieve the target goal.

- Find the technically and logistically appropriate site for small-scale radio infrastructure.
- Explore and understand regional and IIT interest and need for a community radio station
- Create a cost and operational feasibility report including start up, operational, sample programming, and staffing requirements.

Here in this chapter we will explain our course of actions to implement the objectives.

3.1. Assess the technical and logistical appropriate site for radio station

Being nestled among the forested hills of Kamand, technical issues are likely to affect radio station setup and broadcasting. Due to geographical complexity, there can be attenuation and uneven broadcasting in expected range.

Taking into account of such technical reasons, we will conduct a careful technical evaluation of the site requirements for radio. This will include the assessment of topographical challenges, weather conditions, antenna and internet capacity etc. We would like to meet and seek guidance from experts of radio telecommunication. Since the Mandi and Kangra’s geographical structure is similar to Kamand in some extent, hence we will visit the technical department of the radio stations operating in these districts to get better understanding of problems due to geography in radio telecommunication. Besides these, we will contact radio stations of Shimla, Sunder Nagar and Keylong districts and visit them if required. We will be also contact some radio stations of Chandigarh and Utharkhand.

There are successfully functional community radio station in both Kangra and Solan. We will visit them with our main emphasis on learning about setup, operation and maintenance of such radio station. Information gained from these community radio stations will be milestone for our project.

Beside technical feasibility, we will identify the technical feasible site for radio station tower/antenna setup by using the equipped knowledge from these talking and visits.

Establishing a meaningful radio station is the foremost aim of this project. This aim can only be realized if we can understand and know the community well residing in the broadcast range. So we will be classifying the people falling in the broadcast range according to age, sex, literacy-level, occupation, health, standard of living. We will interview representatives of local resources such as local governing body (panchayat), or NGO’s for this classification and identification. To accomplish this classification task, majority of our interview will be with
respective persons of these legal institutions as they have more appropriate and precise knowledge.

### 3.1.2 Asses the regional and IIT interest and decide the mode of broadcasting

We will start with sample of convenience and try to accomplish many objectives (which depend on survey and interviews) as at the end of this survey part, we will be able to know and understand what is community needs and preferences. We hope to cover maximum area for survey. We will get insight from those people who were earlier or in present part of any such community operated radio station (Berg, 2007).

We will try to present our idea to them clearly so that we both are on same idea platform (Berg, 2007). We will have to firmly ask what they think about this project. We will collect and analyze their opinion and their interest regarding the setup of radio station here. Their attitude and recommendations will decide future aspects of this project. We will like to know their reasons why if they do not want a radio station and will try to answer them if possible.

Based on that interview/survey with local people, we will also gather information about the equipment through which they can receive broadcasting. Based on the data we will choose suitable mode of broadcasting to ensure that majority of people can reap benefit from the project. Mode of broadcasting option may be finalized as one of FM (KHz or MHz), web based, and mobile based, Ham etc.

### 3.1.5 Analyze the total setup, operational and maintenance cost

Most basic requirement of an operational radio station is the bandwidth for broadcasting. We will first contact ‘Ministry of information and broadcasting’ for bandwidth related issues and estimate the cost of purchasing bandwidth. Using the information during visit to Kangra and Solan community station we will estimate the setup and other functional cost. We will also contact the sellers who sell the required equipment to get an estimate about the setup price.

Survey data will be used to accomplish this objective. By judging their interest, attitude, recommendation, the type of programs for broadcasting will be finalized. We will design the schedule for broadcasting of programs such that the maximum percentage of target audience can listen to them.
3.4 Project timeline

We here present the Gantt chart which describes our tentative schedule to complete each objective. In first two weeks we will mainly focus on accomplishing the objective 1 which is to check the technical feasibility of the radio station in Kamand. We have dedicated 2 weeks for this as we will have to make many field visits. Then in week 3 and week 4 we will be doing survey and interview mainly thus aiming to achieve the objective 2 which is to classify community. Week 5 is mainly for analysing the outcome of survey and thus we will try to complete objective 4, 5 and 7 as they are dependent on survey data. Since we will be targeting the stated objective in week 5, we may have to take some interview or survey for deep analysing. After completing all this work, we will shift our attention on estimating total cost and design of appropriate schedule for broadcasting.


### 3.5: Conclusion

Analysis of technical feasibility of Radio Station' in Kamand is the main goal of our project. Studying the needs and demands of the small community of Kamand is important before getting equipment and licences for radio station. More emphasis will be laid on visiting the actual site where these kinds of projects have been implemented successfully.

The flow of work will be divided into multiple steps. First, we will contact the technical department of Ministry of Telecommunication and Broadcasting in Mandi for seeking guidance and help. We will also contact persons who helped in setting up community radio stations in Kangra and Solan, to acquire the knowledge of initial problems faced. Classifying the local community on the basis of age, sex, standard of living and literacy-rate will help in framing interviews. Interviews with local people will not only provide feedback but will help in building long term contact with community. The next big step towards achieving our goal is estimating the cost of implementing the project in Kamand, as it should not be too much expensive. We will also have to stress on finalising the best location for setting up the radio transmission towers.

Even after the technical feasibility is achieved we will have to work on selecting a proper dedicated team for management and setup of the station. Thus, with the help of IIT MANDI and the local people of Kamand we will be able to provide the people with a service they will find fruitful.
Chapter 4: Field Visits

Our project’s goal is to analyze the technical feasibility of community radio station in Kamand. To gain practical insight and knowledge, it will be more beneficial if we visit some of successfully working community radio station. Hence we visited Solan Hamara MSPICM community radio station.

4.1 Visit to Hamara MSPICM solan community radio station

A private educational institute operates Solan Hamara MSPICM community radio station. We first understood their goals. Their content revolve around developmental issues of health, agriculture, employment, government opportunities, literacy programs and life coping skills etc.

We started by learning how did they surveyed their community before starting the radio station and which type question did they included in their questionnaire and on what basis did they choose those questions. We then understood how they did deduced the survey outcome and finalized the goals. Besides these, we discussed how they are functioning currently to fulfill those goals.

Reporters are ground units i.e. they are the ones who meets community personally. Our discussion was centered on what should be the behavior of reporters toward community and how should they work to achieve the stated goal. We also learned about the various equipment that are handy for the reporters.

We dived in the detailed technical aspects of their station. We learned the various technical posts like radio-jockey, audio-mixing, audio-editing, content writer and regulator etc and their roles/work. We understood the various technical training of those respective persons. We discussed the various systems they are using and their alternatives. Those systems were mainly for audio-editing, audio-mixing and content writing etc. Thus we discussed the various hardware and software components they are using in those systems. We later discussed their alternatives and also did cost analysis.

We later inspected their interview room and learned how to build keeping both acoustic (i.e. there should be no noise disturbance) and reachability/accessibility (i.e. community can reach there easily). We also discussed the designing of the ambient radio station. We inspected the various equipment needed in the interview room and also did their cost analysis.
Lastly we moved to the core radio station chamber through which the programs are aired. We discussed role of this room and various equipment they are requiring. This room is very important and had lots of hardware and software equipment. We learned the about these equipment and the various technical training needed to operate those.

We later did cost analysis of all components and from where we can procure them. Later we had an informal talk and they gave us suggestion which we can implement in our radio station which they are unable or can’t implement in their radio station due to reason.

4.2 Visit to Jatoli

Solan Hamara MSPICM radio station was facing problem in their antenna broadcasting range. So they planned to shift the antenna to a hilltop so that they can extend their broadcasting range. So they choose Jatoli (a place which is 2-3km from solan). We visited there and
understood how shifting antenna to that location will be helpful in extending their broadcasting range.

Figure 5-current antenna site  Figure 6-jatoli new antenna site

Figure 7- showing that Jatoli new site will be at a hill top thus enhancing the broadcast range
4.3 Planning to visit IIT Roorkee

We choose the Solan radio station out of all other radio station of India because Solan is very similar to Kamand in geographical basis. Our purpose of Solan visit was for Kamand community. We have planned to use internet based radio for IIT Mandi Community due to easy access of internet. So keeping IIT community in mind, we decided to visit IIT Roorkee as they have operational radio station.

Visiting them will help-

- Learn about internet based radio station
- Yet IITs may be geographically distributed but their students are culturally somewhat same. So we can get insight about IIT Roorkee students’ need.

A technical problem related to radio broadcasting sprung up at IIT Roorkee, hence visiting them was postponed.

4.4 Visit to Chandigarh Akashvani

More depth knowledge of radio station can only be provided by someone who have a rich knowledge of this field. The technical department of Major commercial radio stations can help us in this. So we went to Chandigarh Akashvani. At present Chandigarh Akashvani is broadcasting shows which are recorded there, some shows which are relayed from Delhi AIR and Chandigarh Big FM shows. Hence they taught us how, we can relay the programs to nearby other radio stations and thus can have bigger broadcasting range. Being a commercial radio station, their equipment were more sophisticated in comparison to a community radio stations we visited. Despite this difference, they showed us even various minute functionalities of equipment and how to handle them which were new to us even after Solan visit and lot of literature review we have done.

Figure 8-control room

Figure 9-Transmiiiter
Solan radio station recording room was a good example of low budget recording room, while the recording room of AIR were of medium and high budget. They taught us more about the recording room which were moreover same as what we learned from Solan visit. We came to know how AIR affect the life of people, when we saw the pile of letters of audience for them.
Chapter 5: Questionnaire for survey

5.1 For people living in Kamand valley (localites):

Attitude of Kamand people towards Community Radio

Here, we are asking questions to know about your interest-

Q1. How often do you listen radio per week?

1 2 3 4 5 6 7 8 9

Q2. How important is radio for you?

1 2 3 4 5 6 7 8 9
1 Extremely important
2 important
3 Not at all

Q3. How often do you listen health related programmes per week?

1 2 3 4 5 6 7 8 9
1 Frequently
2 Not at all

Q4. How often do you listen entertainment related programmes per week?

1 2 3 4 5 6 7 8 9
1 Frequently
2 Not at all

Q5. How often do you listen education related programmes per week?
Q6. How often do you listen livestock and farming related programmes per week?

1 2 3 4 5 6 7 8 9
Frequently Not at all

Q7. How often do you listen awareness programmes per week?

1 2 3 4 5 6 7 8 9
Frequently Not at all

Opinions regarding opening community radio station in Kamand-

Q1. If given chance, will you participate in radio shows?

1 2 3 4 5 6 7 8 9
Definitely No

Q2. What do you think about opening a radio station in Kamand?

1 2 3 4 5 6 7 8 9
Not to be opened

Q3. If a radio station is opened in Kamand then, according to you

1. Should it broadcast health related programmes?

1 2 3 4 5 6 7 8 9
2 Should it broadcast entertainment related programmes?

Definitely

1 2 3 4 5 6 7 8 9

No

3 Should it broadcast educational programmes?

Definitely

1 2 3 4 5 6 7 8 9

No

4 Should it broadcast livestock and farming related programmes?

Definitely

1 2 3 4 5 6 7 8 9

No

5 Besides these, what do you think, we can broadcast which will help kamand people?

a

b

c

Q4 Will you give feedback/ suggestion on appropriate platform if asked?

1 2 3 4 5 6 7 8 9

Definitely

No

Name-
Sex-
age-
literacy level-
Occupation-

surveyed by-
6.2 For IIT MANDI:

**ISTP_LAN_RADIO**

- **name**

- **Profession**
  - Student
  - Faculty
  - staff

- **Do you want a community radio for our IIT CAMPUS?**
  - YES
  - NO

- **How many times would you listen to online radio?**
  - 0
  - 1
  - 2
  - 3
  - 4

- **What kind of shows do you want on air?**
  - Educational
  - Entertainment
  - Health
  - Campus News
  - Phone IN
  - Other:

- **What would be the suitable time for broadcasting?**
  - 6 - 9 AM
  - 3 - 6 PM
  - 7 - 10 PM
  - 10 - 12 PM
  - Other:

- **What kind of role will you play in our IIT Campus radio?**
  - Radio Jockey
What other kind of shows do you want?

form link  -https://docs.google.com/forms/d/17R4RBeNv5AfThH56Mn7j9oiMGvlfFie4UQxdfBWV_74/viewform
### 5.3 IIT Mandi Responses

Here is a part of online survey done in IIT Mandi campus-

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Name</th>
<th>Profession</th>
<th>Do you want a commercial radio for our IIT Campus radio?</th>
<th>How many times would you listen to online radio?</th>
<th>What kind of shows do you want on air?</th>
<th>What would be the suitable time for broadcasting?</th>
<th>What kind of role you expect to play in our IIT Campus radio?</th>
<th>What other kind of shows do you want?</th>
<th>Kind of interactive shows where you can get your message across</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/16/2014 1:30:35</td>
<td>Deepak Sharma</td>
<td>Student</td>
<td>Yes</td>
<td>2</td>
<td>Entertainment</td>
<td>7 - 10 PM</td>
<td>Technical</td>
<td>Yes</td>
<td>Rocknroll</td>
</tr>
<tr>
<td>4/16/2014 5:09:37</td>
<td>Prateek Rajdev</td>
<td>Student</td>
<td>Yes</td>
<td>2</td>
<td>Entertainment</td>
<td>7 - 10 PM</td>
<td>Technical</td>
<td>Yes</td>
<td>Punjabi music</td>
</tr>
<tr>
<td>4/16/2014 5:19:30</td>
<td>Abhimanyu Mittal</td>
<td>Student</td>
<td>Yes</td>
<td>2</td>
<td>Entertainment</td>
<td>7 - 10 PM</td>
<td>Content Writer</td>
<td>Yes</td>
<td>Technology Launch</td>
</tr>
<tr>
<td>4/16/2014 5:37:13</td>
<td>Himanshu</td>
<td>Student</td>
<td>Yes</td>
<td>2</td>
<td>Entertainment</td>
<td>7 - 10 PM</td>
<td>Content Writer</td>
<td>Yes</td>
<td>Radio Jockey</td>
</tr>
<tr>
<td>4/16/2014 6:01:02</td>
<td>Tushar Gupta</td>
<td>Student</td>
<td>Yes</td>
<td>2</td>
<td>Educational</td>
<td>10 - 12 PM</td>
<td>Marketing</td>
<td>Yes</td>
<td>Contents</td>
</tr>
<tr>
<td>4/16/2014 6:09:13</td>
<td>Student</td>
<td>YES</td>
<td>3</td>
<td>Campus_News</td>
<td>7 - 10 PM</td>
<td>Content Writer</td>
<td>Yes</td>
<td>Music Shows, and may be important announcements. Once in a while interviews Current top 10 bollywood songs Guess the song and win a prize Kanal idb Events happening in all other technical institute</td>
<td></td>
</tr>
<tr>
<td>4/16/2014 6:17:41</td>
<td>Student</td>
<td>YES</td>
<td>2</td>
<td>Entertainment</td>
<td>7 - 10 PM</td>
<td>Technical</td>
<td>Yes</td>
<td>Music Shows, and may be important announcements. Once in a while interviews Current top 10 bollywood songs Guess the song and win a prize Kanal idb Events happening in all other technical institute</td>
<td></td>
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<td>2</td>
<td>Educational</td>
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<td>Technical</td>
<td>Yes</td>
<td>Music Shows, and may be important announcements. Once in a while interviews Current top 10 bollywood songs Guess the song and win a prize Kanal idb Events happening in all other technical institute</td>
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<td>4</td>
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<td>1</td>
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<td></td>
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<td>Design of interactive shows where you can get your message across</td>
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<td>Pranav Narayan</td>
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<td>Technical</td>
<td>Yes</td>
<td>Design of interactive shows where you can get your message across</td>
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<td>Student</td>
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<td>4</td>
<td>Entertainment</td>
<td>10 - 12 PM</td>
<td>Technical</td>
<td>Yes</td>
<td>Design of interactive shows where you can get your message across</td>
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<td>YES</td>
<td>1</td>
<td>Campus_News</td>
<td>7 - 10 PM</td>
<td>Reporter</td>
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<td>Design of interactive shows where you can get your message across</td>
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**Figure-6 Responses IIT Mandi campus**
Chapter 6: Survey and Social Interactions

What is the point of doing anything if no one needs it? Community Radio Station is being establishing for the people living in the region. So, we headed towards the village of Kamand. We tried to cover people from rich to poor, educated to illiterate, children to aged. We interviewed them one by one. Then we headed towards IIT Mandi, which was quite easy for us as we are a part of it. For we held some questions in a google doc and passed it on to people over their email accounts. We have got surplus views over the topic with a lot of variations.

6.1 Language:

Mostly, people were comfortable with local Mandyali language and Hindi in the village and IIT Mandi people are more comfortable with English some people while some people of IIT Mandi wanted some programs in Hindi. So, our radio station working over this region could be tri lingual or we could have different programs specific to different people in their language like for IIT Mandi it would be in English and general programs could be in Hindi.

6.2 Kamand Village:

In the village, as we start talking to people we found a lot of different views some of them were very excited about it as they had positive points in their mind, some of them were very upset as they were thinking like in this modern world of television, internet and DTH what is the need of radio. Some of them were like no one isn’t going to do it, why government of someone would invest money on their needs.

We talked to a forest officers named Nagendra Thakur and Sanjay Sharma, they were very enthusiastic about the project. They told us that it would make their work better and easier as they could provide information regarding forest fires, danger from wild animals etc. They showed their full support towards the project.
We went to a general store there were few young guys aged 21-22 years old and some 36-37 years old one of which was the of the store. The store was named ‘Chandel Eneterprises’ on the last name of its owner ‘Dholeram Chandel’. Here also w found a quite positive response as they were running a store, they need to spent all their time in the shop and if they could get all information about their region over radio it would be better for them. He also said that they could use it to inform people about the supply of critically needy products over radio.
In a house about a hundred yards off the road there was some kids, a housewife and her teenage daughter were sitting. The woman was tailoring some clothes. As we went to her she affectionately said “these are my kids, growing up like a sunsets on a busy day, rapidly. I would like to have anything or everything which could make them a better person with a good wealth.” Then on her every statement was over her children. From there we get that including children and youth orientation programs will be a good option which could help them develop their region over time.

Figure-10, Mrs. Reeta Kumari (housewife) with her sewing machine beside

Figure-11, Miss Neetu Devi

Overall, the response from the village was very positive. We took interviews of about 12 people in the Kamand valley. For the next week we have planned to conduct more surveys in the village of Navalaya, Katindi and Kataula, where we hope that this number will touch 50. They are welcoming the concept of radio station in their region. They showed even their interests to conduct their own shows and participate in the proper conduction of radio station. Some of them were not taking the project seriously maybe because of the political promises that they have every general elections. But overall they are enthusiastic that their community would be get various benefits and it will help them in going ahead with the fast developing world.

6.3 Survey Report of nearby places:

We have done our survey in nearby village of “Kamand” of the people of nearby places, where we found that most of the people don’t know about community radio stations or how to operate and manage the working of a community radio station.

Most of the villagers wanted this for entertainment purpose. We got this response from middle aged people. The elder section wanted these radio stations for listening to news (politics related news of nearby areas).

One of the villager who hailed from Delhi (here he works as civil engineer ) told us that there is no FM signals which he could switch on for listening news and other thing like music.

People here don’t usually listen to radio as there is no radio station here at all but some of them who live in Mandi mainly the working class people listen to radio frequently.

During our survey we realized that people are in serious need for a radio station because they want news related education, health, various methods of farming to improve
their farming productivity and also social awareness related issues. Aged people usually want these type of radio stations to listen to news of nearby areas.

Thus provided they are given a proper platform they will be very happy to entertain our idea of this community radio station.

During this we also found that people were quite enthusiastic about working for our radio station thus giving us their valuable inputs as the community is more close to them and they will have a better knowledge regarding it then us.

Women were found to be reluctant about their views as is the case with the female population of villages in Himachal Pradesh, but still we were able to pull out some relevant data and thus got an insight into their choices and preferences for the radio station as well.

Figure 12-Anoop Rana of Katindi village

Figure 13-Bargad Thakur of Navlaya
6.4 IIT Mandi Campus:

IIT Mandi community consists of students, research scholars, faculty and staff. They are much comfortable with internet, so we decided to have an online survey for IIT Mandi campus. We prepared a google doc and shared it with all the IIT Mandi students and faculty members of IIT Mandi.

We have got a great response from the students, their views were more oriented towards entertainment and mostly songs to be aired over the time of 7pm to 12pm. But they were more enthusiastic towards working for the conduction of radio station. As it is a technical institute, so expectedly they were very enthusiastic to work on technical stuff whereas some of them were also interested in doing jobs like Radio Jockey, designing, etc.

From the faculty we have got quite good response as they were thinking it to be a good and faster option for communicating announcements. Some of them have also respond to the possibility of having radios at different places all over the campus.

Finally we get towards staff, they became very happy knowing the aspect as it would make their life very comfortable. The people who were very exciting about it was security officers of IIT Mandi which we can say, are about 70% of the staff. In their opinion, it would make IIT Mandi a better place to live and people around i.e. people scattered in the valley and villages around would get connected to IIT Mandi.
Figure-15, Mr. Tarun Prasad, security officer at IIT Mandi with us
Chapter 7:- Result and Discussion

After doing surveys in the adjoining areas of Kamand and as well as in IIT MANDI we are now having a very good idea as to how successful this community radio station would be in a place like Kamand. Though for most of the people "community radio station" was an entirely new thing, but all of them welcomed our idea with open heart. The following section will deal with the results of the survey and findings followed by a brief discussion of the findings.

7.1 Feedback from Kamand and nearby Villages:

The survey was quite successful in Kamand village where the majority of the population was shopkeepers and small farmers. The ladies seemed to be more enthusiastic about our idea than the males, though there were a few exceptions as well. In Kamand village we found a lot of female shopkeepers, who actually wanted to know a lot about the outer world through our radio station. The females saw this as a great opportunity for their kids both as a part of their education and entertainment. This gave us a clear idea as to what should be the contents of the programmes that are to be broadcasted in our radio station. We also did discover that a few of the girls we talked to can be radio jockeys in our radio as they were educated and had very good communication skills.

The elder section of the society preferred retro Bollywood music whereas the middle aged housewives favored modern music. So, overall response was mixed. The male population was also inclined towards good music but had some special demands like local political news and sports news, mainly cricket. Farming and health related advices also were the hot topics that the population in general called for.

![Figure-16 Kamand village survey statistics](image-url)
Figure-17 IIT Mandi survey statistics

Figure-18 Katindi village survey statistics
Figure-19 Navlaya village survey statistics

Figure-20 All village comparison statistics
7.2 Feedback from IIT campus:

The IIT MANDI campus is composed of different groups of people namely students, teachers, staff, and helping staff from the adjoining villages. The trends slightly differ as we move from Kamand village to the students of IIT MANDI. The basic requirements of the students of IIT MANDI being placements, Placement news and updates of companies coming to different colleges and their placement status was a highly demanded subject here. With respect to entertainment again we got to see a diversified response from that of Kamand. Students here demanded English music and metallic music. Teachers however were interested in music of the 90's. Students also were interested in having a platform where they could have a daily update of the campus news (i.e. regarding any technical, cultural or sports activity). Some suggested that we could have some fun shows with trolls on teachers as well as students.

The faculty also suggested that there should be some shows which could address the day to day problems and bring them up in front of everybody.

One of the other things students requested was movie theatre releases in adjoining multiplexes and fairs and other functions in prominent places.

Many students as well working staff were interested in hosting different events in our radio station. Apart from being a radio jockey students were highly interested in technical jobs like content developing and maintenance of the station.

The trends thus show a lot of diversity both within and outside the campus, thus building upon the expectations of all and being able to do it on a long term basis will possess a major challenge for our team..

7.3 Discussion:

Thus doing this survey gave us an exposure of the actual scenario. The survey results gave us a wide variety of options so the only thing that can be done to accommodate everyone's wishes is divide the time slot accordingly. The benefit we would get is that, the different types of programmes are demanded by people at different point of time which gives us the flexibility to account for all.

Also a good no. of people wished for local news and knowledge related stuff so we will be needing a dedicated team for collecting information that can be successfully broadcasted along with the editing and content developing part.

Though we assumed people to generally opt for music and other entertainment related stuff only but surprisingly we had a fairly good response for information on farming and managing livestock and, also health and education matters.
7.4 Cost Estimation

We have categorized the Community Radio Station in three parts. First one is of Basic level corresponding to minimum cost required for purchasing the main equipments and transmitter. Medium level corresponds to the fact of having good studio with acoustics and sound proof doors. The advanced level consists of all the best equipment and systems needed to build a community radio that will not only have latest technology but also have best quality acoustics.

This table is prepared according to the data collected from various shops and dealers and some of the online shopping websites. This is liable to change with time, as the equipment cost may increase or decrease according to the market.

<table>
<thead>
<tr>
<th>Components</th>
<th>Basic</th>
<th>Medium</th>
<th>Advanced</th>
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</thead>
<tbody>
<tr>
<td>FM transmitter with antenna kits</td>
<td>31800</td>
<td>56268</td>
<td>126828</td>
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<tr>
<td>Digital field recorder</td>
<td>17550</td>
<td>46800</td>
<td>105300</td>
</tr>
<tr>
<td>Laptops(3) with ubuntu and airtime software installed</td>
<td>60000</td>
<td>110000</td>
<td>100000</td>
</tr>
<tr>
<td>Condensor Unidirectional microphone for field recording(6)</td>
<td>1800</td>
<td>21600</td>
<td>54000</td>
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<tr>
<td>UPS</td>
<td>30000</td>
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<tr>
<td>Professional Headphones(3)</td>
<td>3000</td>
<td>10000</td>
<td>15000</td>
</tr>
<tr>
<td>Acoustic Treatment</td>
<td>10000</td>
<td>30000</td>
<td>100000</td>
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<tr>
<td>Microphones(3) with stands</td>
<td>20000</td>
<td>40000</td>
<td>70000</td>
</tr>
<tr>
<td>Audio connectors and miscellaneous</td>
<td>10000</td>
<td>15000</td>
<td>30000</td>
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<tr>
<td>Total</td>
<td>184150</td>
<td>329668</td>
<td>661128</td>
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Chapter 8-Recommendations

8.1 Recommendations

After thoroughly interpreting and analyzing the data we get from the literature review, field visits and survey, we are suggesting these recommendations.

- The Katindi will be the best place for the broadcasting tower setup because it is at height and cover region in both directions i.e. Mandi on one side and Kautala on other side. If it is only for the IIT Mandi, then we can put the tower on north campus upcoming CPWD guest house roof (that guest house will be on some height). Constructing tower on roof will facilitate to save money as we will now only need to construct approx. half tower.
- Assuming that broadcast tower will be at Katindi, there are two options to put the transmitter
  a) If we put transmitter in Kamand campus (near the radio station), then we will have to use longer feeder cable due to more distance. It will cause lag, attenuation and lots of noise. So it will require more sophisticated instruments to tackle these extra factors and thus cost will rise.
  b) If we put transmitter near the broadcasting tower at Katindi, there will be no problems as that were in previous case but on the other side, safety issues of transmitter will be arise.
- Single transmitter (medium cost range) can be used non-stop for only 6 hours and thus require 2 hours rest after every 6 hour broadcasting. Transmitter is costly and if budget permits, it is suggested to use 2 transmitters. So by using transmitters alternatively, nonstop broadcasting can be done.
- Recommended design for radio station building is
- Recommended materials for buildings

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<th>Material</th>
<th>Comment</th>
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<td></td>
<td>These are the half part of the wall. Repeat these to form second half (see figure)</td>
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<tr>
<td>first</td>
<td>Wooden frame</td>
<td></td>
</tr>
<tr>
<td>second</td>
<td>Cladding-ply/bison board</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Insulation-rock/glass wool</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Airgap</td>
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<table>
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<tr>
<th>Floor</th>
<th>Use carpet on floor as these have good sound absorbing quality.</th>
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<table>
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<th>Acoustics</th>
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<tr>
<td>Low</td>
<td>Molded paper mesh+rock/glass wool to bind it</td>
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<tr>
<td>Medium</td>
<td>Acoustic foam</td>
<td></td>
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<tr>
<td>High</td>
<td>Paper Composite board</td>
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| Slanted glass | Window should be slanted downwards to reflect noise towards the floor as floor carpet will absorb it. Straight glass may reflect sound upwards which can reflect from wooden walls thus sound can get trap in room for some time. |
No inductor coil devices

Electromagnetic coil (inductor coil) devices should not be in recording/live room as these causes fuzzy noise which is captured by good quality microphone. Hence incandescent bulb, heater, AC, tube light, fan should not be present in the room. So use CFL bulb and split AC instead.

Figure-21 proposed radio station design
8.2 Conclusion:

Technologically, it is feasible as all the components and material required are available in the market. Socially, people are respecting the initiation of the project. However, some of the main problems which we need to overcome are licensing and budgeting. Licensing needs a lot of time as it has to get passed through the ministry of telecommunication and broadcasting. The money required for establishing studio and tower for transmitters will consume major part of the budget, so to start with it first of all get money sanctioned by the government or institute, as per the policies. Taking professionals help will be very useful for the starting conduction of the radio station. And carefulness about the copyright issues are very important in today’s commercialized world.
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