A Participatory Video and Audio Platform for Community Interaction Using DVDs and IVR Systems

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1. INTRODUCTION

Community screenings in rural India through DVDs and projectors have had an impact in improving education [1], agricultural information dissemination [3] and community empowerment [4]. These methods have been successful primarily because local people and references are featured in the videos making the information contextual, and interactive sessions are held with the audience making the screenings engaging. Nonetheless, there are some challenges. First, sustaining the interest of the audience during a screening depends heavily on training the field staff to remember various discussion topics they should initiate to make the screenings interactive. Second, even though a significant number of people may show up at the screening, it is hard for the field staff to keep them engaged beyond the screenings to offer them continued information support and on-going learning.

We aim to address these challenges with our platform of interactive *DVD-IVR magazines*. Our platform can generate customised DVDs through a simple web based interface allowing the embedding of multiple choice questions (MCQ), discussion ideas, announcements, etc, in the DVD, to help the field staff engage with the audience around these during community screenings. We additionally integrate the DVD publishing platform with an interactive voice response system (IVRS) so that the audience who attended the screening can, beyond the screening session, continue to answer quizzes, leave feedback or ask questions about specific videos, and thus remain engaged with the field staff. IVRS have been used widely to create asynchronous engagement mechanisms with the community [8, 9, 7, 6, 2]. We adopt a similar approach in the context of community based organisations to study how a mix of video screenings and IVRS feedback improves their engagement in an organised and scalable manner.

Our platform is general enough to be useful in community screenings, closed door workshops or individual viewings. Henceforth we describe the working of the platform in the context of our field partner, Video Volunteers [4], who train people to create short films on issues such as corruption, health, education, etc, and screen the films in neighbouring villages. Community screenings by Video Volunteers' staff are typically held in village squares in the open-air during evening hours using multimedia projectors, sound systems, and DVD players. Content for a screening is pre-decided on a particular theme, and a single screening may be attended by 50 to 100 participants or more. Video Volunteers' field staff, whom they call *community correspondents* (CCs), are trained in-house to raise topics for discussion highlighted in the films and conclude with a *call-to-action* to encourage people to take steps in their day to day life, for example, to resist corruption, follow good health practices, send their children to school, etc.

Our goal is to help Video Volunteers create customised DVDs for their CCs to help them raise topics for discussion during the screenings, and provide an accompanying IVRS for the community members to raise queries to the CC, report related stories, and request for specific topics to be covered in subsequent screenings. We plan to evaluate our platform through controlled trials that measure the impact of the screenings and IVRS on engagement levels within the community, information retention rates of the people, and ease with which the CCs can remain in touch with their communities. We are keen to see if we can eventually develop standard operating procedures of using video and audio in ways made simple by our DVD-IVR platform, to serve as an organised and scalable participatory communication medium for rural communities.

2. PLATFORM OVERVIEW

Figure (a) shows the process flow on the platform. During publication, the platform is assumed to have a pre-loaded pool of videos, text for quizzes, etc. On a web interface the publisher can build a DVD using certain pre-defined menu templates to tie the videos, ads, and quizzes together. During screening, the IVRS can run attendance apps, quizzes, feedback & suggestion systems and call-out apps. The platform thus provides an end-to-end solution to help community based organisations to build DVDs, enhance them with quizzes and discussions, and use a suite of IVR apps to remain engaged with their communities beyond the screenings.

The DVDs can be used on a regular DVD player attached to a TV or projector. The remote controls accompanying most DVD players can be used to navigate the menus, select videos to watch, view discussion topics and view and answer MCQs. The quizzes can also be featured on the IVRS. All audio content recorded on the IVRS is pushed to the web platform so that the publisher can feature selected
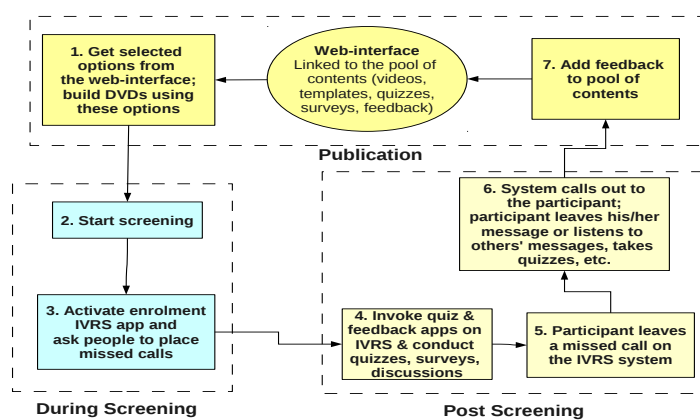
(a) Process Flow
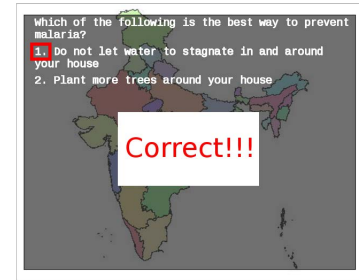
(b) Correct MCQ

audio feedback on the DVDs. We next describe some of the interactive mechanisms on the DVDs.

2.1 Multiple choice quizzes & surveys

Our platform has provision to include MCQs & surveys on the DVD. These are relevant to the topic at hand and the MCQs have several options for answers, one among them right. The question can be answered by selecting an option using the DVD player's remote control. Whether the selected option is the correct answer or not is then displayed through the DVD. Internally, an MCQ is built using the DVD player menus, as pioneered in [5]. The options for the answers are menu buttons and the correct/incorrect displays are videos hard-coded to these menu-buttons. See Figure (b) for a screen-shot of a correctly answered MCQ.

2.2 Iterative Discussions

A useful way to involve the audience in discussions is to iteratively provide *call to action* or topic lists. Here, with each press of the remote control button, lists and sub-topics can be expanded on the screen. This will provide for iteratively elucidating discussions and to a large extent help solve the problem of training the CCs on what issues to raise.

2.3 IVRS

An integral part of the system is the IVRS. The IVRS serves to continue community engagement beyond the screenings. We build upon the Asterisk based PhonePeti IVR system [6], and include voice apps to monitor attendance during screenings, conduct MCQs and surveys, and collect feedback. The CC can activate these apps at different times from the field itself using a separate administration IVRS.

To monitor attendance during the screenings and also stickiness of the audience in subsequent screenings, the CC can activate an app in which the audience place a missed-call to record their attendance. The collected data can be used to monitor stickiness of the audience, or make call-outs to the people with periodic announcements or surveys. The CC may also activate MCQs or survey apps on the system during or after the screening, where the same quizzes as on the DVD can run on the IVRS. Finally, to prepare for a subsequent screening, the CC may activate a feedback app for the audience to provide feedback about the last screening, videos they would like to watch in the next screening, what action have they taken post the screening, etc.

3. EVALUATION PLAN

Following are some specific research questions we are keen to explore to evaluate the impact of our platform:

- **Do DVD screenings and continued IVRS interaction help improve community engagement for Video Volunteers?** As a baseline we intend to capture how many phone calls the CCs get currently, what topics do people raise, and the number of people who currently attend the screenings. We will then track these variables over time and observe if the engagement increases in volume, the quality and diversity of community feedback, and attendance registered during the screenings. We will also try to design experiments that help understand to what relative extent are the different interactive features on DVDs and IVRS apps helpful in improving community engagement.

- **Do interactive DVDs help make the screenings more engaging and lead to better information retention rates?** We will make qualitative observations of the quality of screenings with and without interactive DVDs, conducted by CCs of different skill levels. We will also run baseline and endline surveys to understand information retention rates of community members at sites which used and did not use interactive DVDs, with and without additional IVRS engagement.

4. ONGOING WORK

We are currently working with Video Volunteers [4] to roll out the platform with their community correspondents in the state of Jharkhand in India. We have had a pilot screening in Ranchi and are in the process of collating the outcome.

5. REFERENCES

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