

Design Lessons from Creating a Mobile-based Community Media Platform in Rural India

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ABSTRACT

It is well known that technology based interventions targeted towards development need to look beyond technology to be successful - cultural nuances, capability and intentions of the people, institutional linkages, financial sustainability, etc all need to fall in place to build a robust development program. Supporting this argument, we describe an interactive voice-based community media platform in rural India that works through mobile phones, and how several non-technological innovations in content management, community mobilization, and social impact processes were brought about to make the program an effective social development intervention. We believe that the challenges and insights described in this paper, which span over the last three years of functioning of the platform, will be useful for other researchers and practitioners involved in both mobile and non-mobile based community media projects around the world.

CCS Concepts

• Social and Professional Topics~Systems development

Keywords

Community media; IVR; mobile phones; content contextualization; community mobilization; user training; social impact

1. INTRODUCTION

Community media (CM) interventions aim to empower communities to be able to create and share their own media, with the view that communities have diverse information norms and needs which are not easily met by media platforms controlled by outsiders. Different underlying technologies have been used in various contexts in developing regions, ranging from newspapers written and edited by rural women [khabarlahariya.org], community radio stations funded and run by village communities [17], community video units sponsored by NGOs but run by staff and volunteers locally recruited from marginalized sections of society [videovolunteers.org], and even Internet social media platforms used by visually impaired people [26].

The theory of change for development through CM can be categorized along four broad pathways. First, being able to train people to create content for their communities and initiate discussions, ensures that the content is contextually relevant for the

community. This leads to a better understanding of the topics, eventually even to more effective behaviour change compared with one-way mechanisms of just pushing messages towards people [2,5,6,21]. Second, being able to ensure representativeness on CM for marginalized groups across caste, class and gender lines empowers them to voice themselves, which apart from making them more confident about themselves also enables them to challenge local power structures [17,18,19]. Third, empowering people to talk about their problems and concerns on an open media platform helps promote good governance and accountability through checks and balances that civil society actors are able to impose on institutions [8]. Fourth, CM also plays a role in community building by providing a forum for people to share their views and cultural expressions, thereby bringing communities closer through articulation of a shared identity [2,17].

In this paper, we describe our experience of over three and a half years with creating a mobile-based community media platform active in rural areas of central India. Our contribution is to outline the practical complexities that drive technology uptake and impact in low-income contexts, which are relevant not just for other community media initiatives but ICTD interventions in general.

Our platform, called Mobile Vaani (MV), currently works using IVR (Interactive Voice Response) systems, similar to other initiatives such as CGNet Swara [14] and Avaaj Otalo [16], spurred by the success that IVR based systems have seen in the developing region context due to their unique ability to leverage the deepening penetration of mobile phones and to jump illiteracy barriers through the use of voice. MV uses the common “missed call” concept where users place a call to an MV phone number, and the server cuts the call and calls them back, thus making the system free of cost for the users. The MV IVR presents options to record voice messages they want to share, listen to messages left by others, comment on them, like and forward messages, navigate to different topic and location specific channels, take surveys, etc. A wide variety of topics are featured on MV, including hyperlocal news, job openings, agriculture advisory, social issues such as early marriage and domestic violence, health Q&A, governance and accountability, folk songs and poems, and local and national level advertisements.

The bulk of the content on MV is user generated with recordings contributed over the IVR itself and subsequently moderated and curated by MV’s content team for publication on the IVR. Feedback processes are in place to help the MV team constantly remain in touch with the users and understand their topics of interest to be able to create relevant participatory programs for the communities. The MV platform is localized at the district level with unique phone numbers for each active district of operation; each of these local channels has associated with them a group of volunteers from the local areas who are responsible to popularize the platform among communities they associate with. Promoting a diversity in volunteer recruitment thus translates into a diversity of users from

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different communities who use the MV platform, and which in turn translates into a diversity in user generated content featured on the platform. The local channels are connected into state-level channels and topic specific channels; the IVR architecture is thus similar to that of a portal which users can enter from multiple places, browse around, and listen and participate on news and discussions currently in progress on various topics. MV thus presents a community media model which endeavours to shift as much ownership to the communities as possible, and only provide the necessary backend infrastructure and processes to manage and replicate the platform.

Since when MV was initiated in mid-2012 after a small pilot in 2011, more than 1.5 million unique users have called the platform from approximately 25 active districts in the states of Jharkhand, Bihar, MP, and Orissa. MV has seen 15% month-on-month growth rates, its cost-per-user acquisition is only USD 25c, 70% new users continue calling after their first call, the daily-average-user to monthly-average-user (DAU/MAU) ratio for MV is 40% (Facebook claims a DAU/MAU ratio of 50%), the average call duration is more than 8min per call, 12% of MV users have contributed at least one voice report, and entirely for funding constraints the MV team has had to impose quotas to restrict the daily call volume and usage minutes currently to 10,000 calls per day. Some of these statistics are detailed in the supplementary information on our webpage [<http://bit.ly/1pIleDI>]. Several impact stories have been documented of how MV has empowered young girls to become citizen journalists and gain respect in their villages, increased the awareness of government schemes which led to their increased utilization, enforced accountability and challenged corruption in the implementation of welfare schemes, mobilized communities to organize anti-alcoholism drives, and provided a forum to showcase singing and poetry talents.

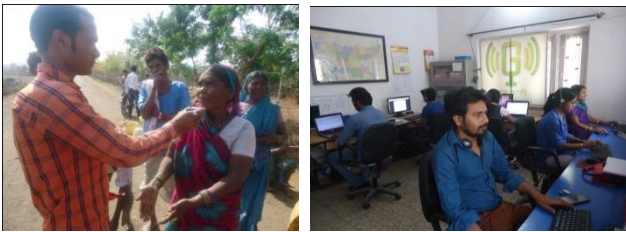


Figure 1: (a) Volunteers mobilizing community members, (b) Mobile Vaani content moderators at work

In the upcoming sections, we describe three aspects of MV operations: content creation and management methodologies, user acquisition and training processes, and impact mechanisms. All these three critical functions have undergone changes over the years, geared towards creating MV into a vibrant community media platform which bring social impact, is financially sustainable, and even diverse groups of users find it to be relevant. We describe the change management process as well, and feel it will provide insights to other community media initiatives, both mobile- and non-mobile based, to build feedback loops into their organizations and change strategies in response to user needs. Our contributions are threefold: We show how content solicitation and curation processes can be built for user generated content which is highly contextual and liked by the users, we show how low-cost institutional structures can be nurtured with local youth and social workers to build replicable processes for user acquisition and training, and we finally show how these community mobilization and content methodologies can be tied together with other stakeholders to create sustainable impact mechanisms.

2. RELATED WORK

IVR based platforms to address social development problems have been documented extensively by researchers. Studies have explored the use of IVR systems to promote democratic governance through citizen journalism [14], grievance redressal [14,13], and citizen-government engagement [3]. Platforms have also been built to encourage agricultural information exchange among farmers [16], solicit feedback on school meals programs in developing regions [7], act as an employment exchange for rural populations [27], helplines to answer queries by community health workers [22], and even engage with visually impaired people [26]. Several technology frameworks have also been built to create IVR applications easily [1,25]. In contrast, the MV platform has emerged as a horizontal voice-based media platform that can anchor many of these use-cases under the same umbrella – MV partners use the platform for crowd-sourced data collection on the performance of government schemes, publicize job openings, push out health awareness messages, nurture farming communities to share information, and enable citizen-government engagement by conveying grievances to relevant government authorities and help state governments publicize their initiatives to the people. Unlike many of the initiatives listed above, the focus of the MV team therefore is to provide a media platform that users find relevant to access and use repeatedly, and then open up the platform to help partners engage with the users on other services of their interest.

We do not spend much time describing how MV is being used by the people, but focus instead on explaining the content management, community mobilization, and impact mechanisms used in MV from an operational standpoint. Earlier studies such as [13,14,16] on other IVR and community media systems have not discussed their operational processes in detail, but focused more on the usage patterns or impact assessment of their systems.

3. CONTENT PROCESSES ON MV

MV is a moderated forum. Any voice messages recorded on the IVR are manually checked by a team of content moderators who follow basic policies to check for audio quality and advanced editorial policies to ensure that politically motivated content, rumours, or unverified corruption allegations are not published. Roughly 6-8% of daily calls lead to people leaving messages, of which 30% messages are publishable. For more than 70% of the rejected messages, the main reason for rejection is poor audio quality. Other messages get rejected because the report is not articulate enough, or it is incomplete, and only 1.5% messages are rejected because the content is objectionable or incorrect. In terms of the workload, a content moderator needs to be added for every 500-700 calls per day increase to vet the content contributions and assign appropriate tags, categories, and titles for the content. At the current call volume, MV employs 14 content moderators supervised by four managers across different functional roles, and publishes between 200-300 messages each day across channels.

The content on MV has undergone three generational shifts since its inception, as shown in the supplementary information. During the first year of operation, MV largely carried an assorted collection of voice messages without any specific topic focus imposed by the MV team. The bulk of the content was about grievances on government schemes, primarily because the very first users of the platform were identified through local partner NGOs who were engaged in activism around key flagship welfare schemes such as NREGA¹ (rural employment) and PDS² (subsidized food), and therefore used the platform primarily to amplify their voice against injustice [23]. This was changed towards a broader focus on health, agriculture, social norms, and cultural expression in the second year

of its operation, spurred largely by a user demand to produce and consume information on other topics as well, and also for financial sustainability where a business need was identified by the MV team to open up (for a fees) the MV platform to NGOs keen to reach remote and rural populations to spread messages on gender equality, family planning, government schemes, and other relevant topics. In the third year of operation, this broader content mandate has been institutionalized through the conceptualization of regular programs in consultation with both the MV community as well as the MV business team. In the next section, we describe the change management process followed to move from the original *grievance redressal* character of MV into a broader community media platform which can cater to multiple user segments.

3.1 Change Management

The MV content moderators are presented with a web based interface through which they mark which content should be published or rejected, and also tag and categorize the content. A content analysis of categories during the first year, shown in Figure 2, revealed that the primary tag on the bulk of content contributed on the forum was on grievances. An analysis of the MV call logs further revealed that even though MV provided basic navigation features such as being able to skip a message to go to the next one, and more than 85% of the users pressed these navigation keys, only between 20-30% of users (depending on their age in the system) actually exhibited a consistent preference in the choice of topic they wanted to listen [10]. Content consumption therefore ended up tallying closely with content production – users would listen to more grievances just because more grievances were being recorded and published on MV.

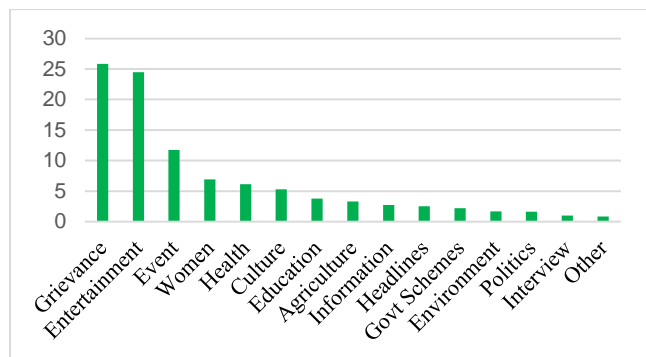


Figure 2. Content available on the platform

Meanwhile, an analysis of quantitative data collected through field surveys with a random sample of 100+ MV users, qualitative data from five FGDs with 55 users (Jan 2013), and detailed stories of people’s association with MV gathered from 36 users (Sep 2013) using the Most Significant Change technique [4], revealed that the information needs of the users were drastically different. The top choices indicated by the users are shown in Figure 3, where educational and livelihood content, local news, and health awareness can be seen to be more in demand.

In the second and third year therefore, two key levers - focused community mobilization and content repackaging - were used to

bring about a drastic change in the content featured on MV. A process to get regular feedback from the users was also institutionalized to ensure that the content remains relevant to users.

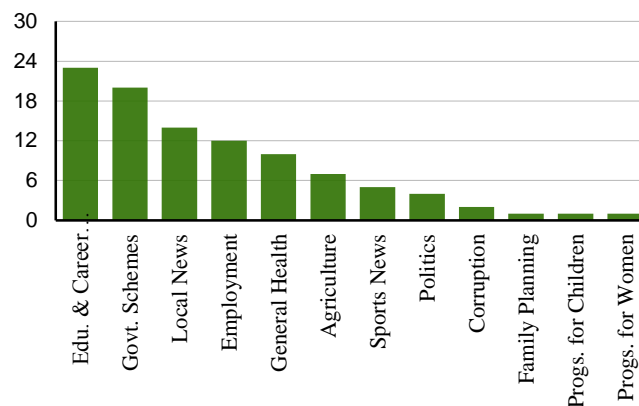


Figure 3. Content needs of users

3.1.1 Focused community mobilization

The current users of MV had formed a perception of MV being a grievance redressal platform largely because they were introduced to the system by the initial set of local partners who were working on rights based activism, and consequently would encourage the users to call and “talk about their problems, wage delays, and human rights violations”. Repeated field visits and training workshops with the partner staff and volunteers, failed to change their mobilization strategy and communication.

Starting from a clean slate, an in-house team of community mobilizers was therefore created by recruiting people from a community media and training background, who built their own offline network. This is described in more detail in the next section. A focused drive was undertaken to include teachers, students, health workers, farmers, self-help group members, and village committee members as users and volunteers to contribute content on topics of their specialization. For instance, community health workers started providing information on seasonal diseases, those who could sing well started contributing songs, children contributed poetry, and elder men in the community commented on the country’s politics. These messages served a strong purpose to create precedent on the platform for featuring other topics, and social recognition such as “best contributors of the week” further encouraged diversity of content on the forum helping it move away from a grievance based focus.

3.1.2 Content re-packaging and editorial bias

When MV was initiated, it featured content in an assorted list on the IVR which resulted in no consistency in the topic between consecutive message threads. This has now been made structured by defining dedicated time slots during the day allotted to different topics. A sample schedule is shown in the supplementary information, where for example between 4-4:30pm, the first few messages on the MV IVR are ensured to be on employment news such as job openings; similarly, between 6-7pm the first few messages are on agriculture; grievances and assorted content was

¹ National Rural Employment Guarantee Act: A demand driven welfare scheme which aims to provide 100 days of employment per household. Typical implementation problems include wage delays, non-payment of unemployment benefits, corruption in material procurement and worker registration

² Public Distribution System: Low income households are entitled to certain quotas of subsidized food. Implementation problems include non-availability of enough food at designated shops, siphoning of funds which results in scarcity, siphoning of food which is then sold through regular retail channels

thus forced to be confined to only a few slots each day. Effectively therefore through an editorial bias, the MV team gave less and less air time to grievances and more air time to other topics, to make them popular.

Running a dedicated slot was however challenging due to the uncertainty about availability of enough fresh content on that topic, and therefore a close working relationship between the content and the community mobilization teams was required, for example, to ensure that enough questions and answers on agriculture were coming in to be able to run the agriculture slot on a regular basis. Another challenge was to come up with suitable time slots for topics which were of interest to different user segments; time preferences to run the agriculture slot were in the evening hours for farmers, women preferred afternoons but often did not have access to mobile phones which were carried by their husbands to work during the day, while children preferred afternoons and evenings provided phones were accessible. A concept of channels was therefore introduced, so that users could on-demand navigate to topics of their interest such as on employment, agriculture, health, women, children, and entertainment. Expectation management was yet another challenge especially for old callers who had the impressions that the MV team will help provide redressal to their grievances. Better communication by the mobilization team and frequent promotional messages on MV explaining that MV is a media platform that can only convey grievances to the authorities but not ensure resolution, helped address some of these concerns.

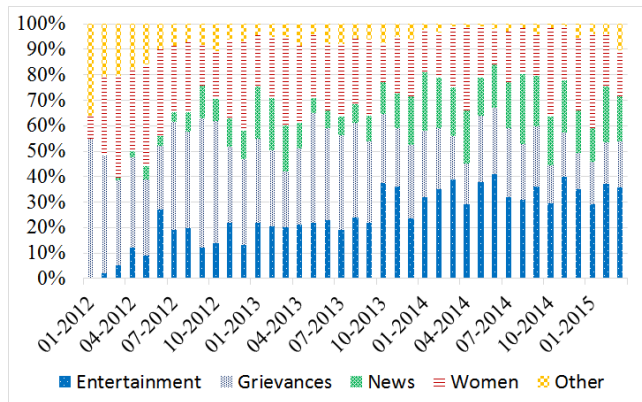


Figure 4. Content production pattern on Mobile Vaani

Overall, the repackaging and focused mobilization was successful in changing the nature of messages on the platform. Figure 4 shows the changing content profile over time. Users too welcomed this change. A 54-year old social activist from the Dhanbad District, Jharkhand, who had been listening to MV since its inception said:

“... The shift in content from grievances reported on various issues to weekly entertainment and informative programs is very refreshing to me, as a listener... By doing this, MV has gone a step further in informing, entertaining and inspiring its users. I say this because the localized entertainment and information offered by the weekly programs aired is unparalleled to the generic content offered by the mass media... Similarly, the discussions initiated by campaigns on various social issues help me learn about a wide variety of things such as existing laws on that issue, our rights and entitlements along with people’s lived experiences, making me want to listen to MV again and again...”

Adding to this, a 25-year old community health worker from the Giridih District, Jharkhand, said that the new content promotes more active engagement than the previous grievance based content.

“... I like MV in its current form... My husband introduced me to it a couple of years back when MV used to receive a lot of grievances... he recorded a grievance on it and asked me to listen to it... at that time I wasn’t sure how to engage with the content, hence just used to listen to it passively. After the introduction of campaigns, I understood how I can engage more actively in the discussions therefore once when a health related campaign happened I participated by giving information and also received relevant information in return... now I regularly follow all the campaigns and weekly programs, participating in discussions whenever I can...”

A 36 year old journalist with a local daily in Jharkhand discussed his perception on how MV is different from other news platforms.

“... Mobile Vaani is like an ideal community media platform where people represent themselves the way they want to. They don’t need an external news agency or a journalist to cover their issues on their behalf... it is the people who own and run the entire MV platform right from choosing the issue they want to base their discussion on, to composing a report, a message, a song or poetry... and recording it on the forum with a view to encourage further discussion within the community or make a dent in government administration or giving mainstream media like our newspaper, material to base news reports on...”

3.1.3 User feedback loops

Undergoing this change also helped institutionalize several user feedback processes in the MV team. The content moderators now frequently undertake phone interviews of regular callers, callers who have dropped out, and new callers, to understand what the users like or do not like about MV. The community mobilization team now has over 300 volunteers who provide a good dipstick to test-run any new programs or get quick feedback in the conceptualization stage itself. The research team also visits the communities frequently to capture feedback about the content. Finally, frequent IVR based surveys and polls are floated to get user inputs on new topics and campaigns they feel should be featured on the platform. All these feedback processes, along with a realization that different user segments have different interests, have initiated the formation of several programs as outlined in the Appendix.

3.2 Information Contextualization

One of the key benefits of participatory content production is that it helps contextualize the message well – the content contains local references, it is in the local language, and people are therefore able to associate with it more easily [21]. Different methods have been in use to drive participatory content production. Community radio stations recruit staff and volunteers from the local community to produce radio programs, and a significant degree of contextualization thus comes automatically if the staff selection is representative enough [17]. Community radio stations have also used IVR systems to invite listeners to call and record their opinions and views on the programs being broadcast; a subsequent broadcast of these voice message recordings adds further localization to the topics being presented [11]. Digital Green with a similar objective takes the recording process itself into the field, by recording videos of farmers from the local communities; the recordings therefore help bring a very contextual character [6]. The MV team has used these insights to build a novel information contextualization process driven by conversations and discussions. Asynchronous conversations through voice messages, where callers record their comments on messages left by other callers, much like on a mailing list or discussion on a Facebook wall, is used as the primary content creation mechanism. The bulk of the content therefore is user

generated, but solicited along specific directions to make content curation simpler. Described next is this process called a *campaign*.

We start with taking a topic such as early marriage as an example. Gender inequality in rural areas of central India is embedded deeply in social norms and manifests itself in many forms, early marriage of girls being one such outcome [24]. The objective of the campaign was to raise awareness about the problems with early marriage, and consequently initiate behavior change in the community after multiple campaigns and repeats of old campaigns.

- The first step is to create a message matrix identifying the key aspects about early marriage on which to initiate a discussion. This can include aspects such as the reasons for early marriage, the effect of early marriage on the health of girls, career choices of boys, etc. In some cases, secondary research is done to build message matrices. Alternately, budgets and time permitting, FGDs are organized with the target group to understand their current level of awareness, biases, and social conditions to create a list of message objectives [maraa.in/media/participatory-content-development/]. Lighter versions are also often undertaken through meetings with volunteers from the community mobilization team, who serve as a representative proxy group. The MV volunteer network is quite diverse and has indeed become an asset for such tasks.

- On each of these aspects, seeding content is then created by the MV content team in the form of narratives for facts and figures on early marriage and its effects, or short dramatized audio episodes are released one at a time over a span of several weeks. In this case the character of a young girl was created who got married when she was 14, and a series of 10 small audio episodes of 5min each were developed that chalked out the story of the young girl and through that touched upon the objectives identified in the message matrix.

- Upon release of a new episode or narration, it is augmented with a call-to-action inviting callers to record their opinion or experiences related to the specific aspect under discussion. The moderation team picks up these voice recordings and stitches them into cohesive commentaries which are then published.

- More callers are invited to participate on the commentaries and the cycle continues for a few days, before moving to another aspect. For example, a caller recorded that early marriage continues to take place because of social norms such as dowry which prompts parents to get their daughters married early. Another caller responded to this comment by saying that the practice of dowry can only be stopped when the young men stand up for their future wives who in today's age play just an important role in the family as their husbands. Yet another male caller recorded a pledge that he will not marry early, and asked his young friends to also pledge on MV against early marriage. In this way, the users are able to contribute highly contextual content which can engage others easily.

- Throughout the campaign, the content contributed by callers is tagged and categorized according to a taxonomy developed for the specific campaign, and this therefore also serves as a means to capture community perceptions qualitatively and quantitatively about the topic [www.gramvaani.org/?page_id=830].

Several interesting testimonials emerged from the early marriage campaign. A 26 year old woman from Topchanchi Block, Dhanbad, Jharkhand said that campaigns help create a dialogue on issues prominent within the community that are not discussed otherwise.

“... I feel better informed about the issue of child marriage after listening to the campaign but I would like to point out that in practice, not much has changed in our village since the campaign.

Yet, campaigns on issues such as these must go on because without the campaign, no discussion would be initiated on these issues. At least, due to the campaign, people are discussing such issues amongst themselves. A lot of people are getting educated and are better informed due to such discussions. They are able to understand the difference between good and bad practices, the things they should do and the ones that they shouldn't do...”

The campaign also planted seeds for future behaviour change, as reported by a 19-year old boy from the Giridih District.

“... After listening to people's experiences discussed during the campaign, I got to know about preventable health problems and financial issues caused due to child marriage. Hence, I've decided that neither will I get married before age nor would I marry a girl who is younger than 18 years... I will also discourage people in my family, community and society from doing it. In my case, I'll only get married when I am properly settled and ready to take on the responsibilities that marriage brings with it...”

Over the last two years, more than forty campaigns on different topics have been executed on MV. Figure 5 shows a comparison of the success of some campaigns executed in different formats. The success is measured through two metrics: a content quality metric assigned by the MV content team based on the quality of user generated contributions that were recorded during the campaign, and the number of contributions. The sizes of the bubbles are based on the number of contributions, normalized on the overall exposure given to content related to the campaign. The exposure is largely a function of the campaign budget. To give a sense of the magnitude, the child sex abuse campaign brought in 235 contributions (69% by women) out of 26,260 times that campaign related messages were heard for at least 30sec, giving a user engagement conversion rate of nearly 1%. This can be considered as the unit to compare the engagement on other campaigns in the figure, such as the early marriage game based campaign had a 2.5x engagement compared to the child sex abuse campaign, and which in turn had a 3x engagement compared to the medicine price hike campaign.

Discussion oriented campaign formats as described in the previous section, on early marriage, child sex abuse, and the availability of free medicines, were among the most successful both in terms of the content quality as well as the number of contributions. All these campaigns were well grounded in the local context by developing message matrices in consultation with the MV volunteers and with partners having strong domain expertise in the topics.

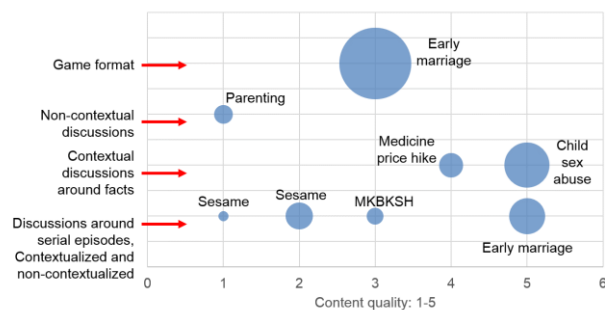


Figure 5. Output comparison chart of campaigns

Another campaign on early marriage was structured as a game – short case studies were presented to users and open-ended questions were then asked against each case study, before advancing to the next case study. This format was quite successful in getting comments from people mostly because it was mandatory

to record a comment to be able to advance to the next stage. This however did not do as well on the quality of content contributions since the recordings were sought spontaneously without giving the users a chance to listen to comments left by others, as in the previous campaign format which aimed to create a discussion.

A third campaign format was to use centrally recorded content not necessarily developed in the local context, and place calls-to-action inviting comments about the topic. One such campaign included fun and musical content for small children and their parents but developed largely for an urban middle class target group in mind; such campaigns got good appreciation from the MV users but not much engagement possibly because the content was fun but hard to relate with. For similar reasons, a campaign on parenting methods which aimed to enable a conversation through a website between rural users in India and citizens in the United States, did not get much participation from MV users because of the apparent disconnect between the two worlds which could not be bridged simply by enabling English-Hindi translation between the users.

These experiences help validate our belief that discussion oriented participatory content creation by users in a shared context is liked by them and also engages them actively, leading to a change in attitude with possible long term behavior change as well.

For a few campaigns, we also ran pre- and post- factual quizzes with randomly selected samples of users to understand whether or not, and to what degree, does the awareness of users improve due to the campaigns. The quizzes were conducted through an IVR based survey solution developed by the MV team. A campaign on maternal health which carried birth preparedness messages on vaccinations and breast feeding, and another campaign to publicize a government scheme promoting better menstrual hygiene practices for adolescent girls, were instrumented. In both the campaigns, the awareness of users increased by between 15-25% for different questions that were put up to them. We are currently running more such studies to be able to establish what kind of learning is most effectively established through which campaign format.

3.3 Information Completeness

Another benefit of participatory content production is that of completeness [21] – when multiple stakeholders participate and provide views on a given topic, the message becomes more complete in terms of its coverage of different aspects. For planned campaigns as described above, the creation of a message matrix tries to take this into account by laying out relevant aspects in advance. Even for spontaneous emergent topics though, the diversity of MV's user base has often contributed to a more complete coverage. As an example, in 2012 in Jharkhand there was a strike by para-teachers (school teachers on contract) for increased wages – the strike lasted for a month and ended up suspending all teaching activity throughout the state. MV quickly turned into a vibrant debate and news platform with active participation from multiple stakeholders, including many para-teachers themselves, parents, students, government officials, and education activists.

We analyzed the content contributed by these different stakeholders, and compared it against the content carried by regional newspapers during the month-long strike. A coarse coding schema was developed to categorize messages as strike updates, problems caused due to the strike, messages in support of the cause of the para-teachers, against the cause, messages that were requests to the government for action, and those that were requests to the para-teachers to call off their strike. Understandably, 68% of the content contributed by the para-teachers was about explaining their cause and requests to the government for a wage increment. More

than 70% of the messages by parents and students however were about the problems being caused due to the strike and the schools being closed, and also that the cause of the para-teachers to go on a strike was unfounded. More than 90% of the messages recorded by government officials through interviews taken by MV's staff and volunteers, was about requests to the para-teachers to resume their teaching duties. Education activists were largely in support of the para-teachers, but also stressed upon the problems being caused due to the strike. A full spectrum of coverage therefore became possible due to active participation by these stakeholders on MV.

In comparison, analysis of the regional newspapers showed that more than 50% of the reports were factual news updates about the strike, and another 30% were about problems being caused due to the strike. Regional media therefore did not represent the issue in depth, and demonstrates the unique space that community media initiatives can command if they can ensure representativeness amongst their participants. Incidents like this which capture the attention of the entire community are rare though, and seem to depend on how polarizing or cross-cutting implications they have. This is an area ripe for further analysis to determine the completeness of coverage of local issues, correlated against the diversity of the user base of MV.

4. COMMUNITY MOBILIZATION

Due to a lack of other communication channels in the media dark areas of MV operation, offline mechanisms are the only alternative to (a) build a user base, (b) train them on using the system, and (c) mentor them to engage with other stakeholders in the local ecosystem. Offline mechanisms are however hard to scale and replicate, and MV has gone through three iterations of refining these processes towards scalability and replicability. Upon inception, MV identified local partner NGOs who actively reached out to communities in which they were working, and began to use the system as an aid for their own work to solicit grievances and corruption reports on government schemes. In the second year, with a conscious effort to change the character of MV into a broader media platform, an in-house community mobilization team was created with staff who recruited volunteers from among diverse user groups, and the volunteers in turn brought their communities on to the platform. In the third iteration, the flat volunteer network was built into a hierarchical structure with the formation of volunteer clubs at the district level. The clubs were given the ownership of having their own local MV channel with the responsibility being put collectively on the club to build up their user base and ensure sufficient good quality content to make their channels vibrant and engaging. A financial incentive model was also developed to reward the volunteers and club coordinators pro-rata on various performance metrics such as the rate of user acquisition and quality of content on their respective clubs. The offline processes are now quite fine-tuned and have been applied repeatedly with clubs being formed in 25+ active districts across four states in central India. We next describe the club building process and associated challenges in more detail.

4.1 Building volunteer clubs

MV community managers who are full time staff of the organization typically enter new geographies through contacts with local NGOs. With help from the NGO staff, community workshops are organized in schools, panchayat rooms, SHG meetings, and other places to inform people about MV and its vision of community media. Most often in these meetings, a few dynamic and socially motivated individuals keen to learn and grow, are invited to join MV as volunteers. An effort is made to recruit

volunteers from diverse backgrounds such as local journalists, social workers, community health workers, teachers, and SHG leaders who already have an understanding of local issues and can be trained further to take up community mobilization activities in their respective diverse communities.



Figure 6. (a) Volunteer training workshop in progress, (b) Group activities such as wall-paintings organized by volunteers for community mobilization

The volunteers are initially engaged on an unpaid basis for at least three months, and only upon exhibiting sustained interest and effort are they graduated to paid volunteers. Over time, when a district has at least 5-8 dedicated volunteers, they are formed into a volunteer club which is given its own dedicated channel. Each club elects one of its members as a coordinator for a tenure of 6 months, who is given the responsibility to hold regular meetings with all the volunteers, mentor and guide new volunteers, and maintain regular communication with the MV community manager for their club. MV currently has 6 community managers who look after 25 clubs that cumulatively have ~ 300 volunteers. The club structure makes a lot of sense from a managerial standpoint, because the community managers then only have to engage with the club coordinators instead of engaging with each volunteer directly. A separate phone number for each club also makes performance monitoring easier, since the call volume and unique callers can be tracked directly. Most significantly, as is also demonstrated through volunteer interviews described later, the club structure gives collective responsibility to the volunteers to ensure its success, much like how group loans in microfinance help ensure high repayment rates.

The volunteers are given a financial incentive pegged to individual and club performance. Clubs are rewarded between USD 15 to 45 per month pegged to daily call volumes to the club of 150 to 1000+ respectively. An additional USD 45 per club is provided to hold community meetings to cover local travel expenses and refreshments. An incentive of up to USD 20 is also given based on the quality of content contributed by the users. Club coordinators are given an additional USD 15 for their responsibilities. The club rewards are distributed among the volunteers based on their individual contributions, on average a volunteer making a stipend of USD 10-15 per month. The coordinator communicates the exact volunteer stipends to their reporting MV manager, and the actual disbursement is done directly by MV through bank transfers.

4.2 User training

It is worth mentioning about the importance of the offline volunteer network to train users and effectively communicate to them what MV or community media is all about. In other studies on the use of IVR systems by poorly literate communities, it was observed that many users were not accustomed to talking to a machine at the other end and despite repeat calls less than 60% of the users were able to successfully record a message [12]. One-on-one explanation over the phone helped, but a high success rate was reached only through in-person trainings and demos. On MV on the other hand, as shown in the supplementary information, more than 85% of the users are

able to record good quality publishable messages within 3 calls to MV. We believe this is because of the offline training given by the volunteers, and also with existing users who demonstrate the system to their friends leading to word-of-mouth growth.

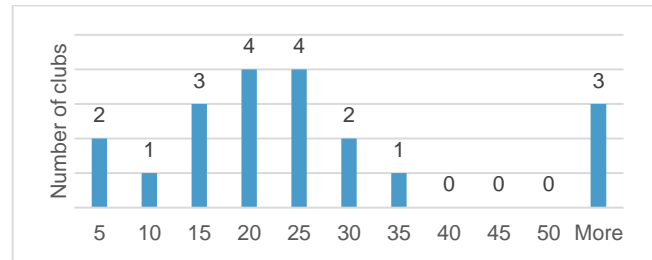


Figure 7. Cost of user acquisition in INR

4.3 Performance variations across clubs

Despite a uniform community mobilization strategy and incentive model, a high degree of performance variation exists across the clubs. This is shown in Figure 7 for a cost-per-user acquisition metric. The cost includes the financial incentives given to volunteers, salaries for the MV community managers, and any travel and training workshop costs. On the left are clubs with very low user acquisition costs; the common characteristic is that these clubs operate in block centers where the majority of volunteers were at some point associated with regional newspapers as stringers or reporters and consequently have strong social networks, or are teachers or social workers with well-paying jobs who are looking to build new skills through their work with MV. On the right are mostly women clubs in villages and are led exclusively by women volunteers. The content quality from these women clubs is quite high, and as described later, some of the clubs have had significant impact on women empowerment as well, but their user acquisition costs remain high. The only satisfactory explanation is that existing social inequities which constrain the movement of women in public spaces, and limited access to mobile phones, make it harder to reach women users than men. In fact, many women volunteers who were a part of a male dominated club ended up dropping out from clubs and reported that their family frowned upon them traveling alone to club meetings. Exclusive women clubs have had better retention.

The varying performance of clubs in the middle can be explained by volunteer interviews cited in the next section, when volunteers are dissatisfied with the financial incentive model and do not perform well, or are not skilled enough, or disputes arise within clubs for class or caste reasons. The MV team's effort in such cases is to spend more effort in training and mentoring the volunteers, provide social recognition and appreciation, and to some extent help resolve differences, but at the end of the day it is really finding the right mix of volunteers and incentives that motivate them to make a good club. As we have seen, a good club is then able to build a good community of users, mentor them for quality content creation, and lead to impact - a crucial ingredient for success is therefore people and not appropriate technology alone [23].

From a business standpoint, this has interesting implications that it is almost 10x cheaper to acquire male users from semi-urban locations than female users from villages. Therefore, if MV's success is to be measured in terms of the number of users, growth rates, and acquisition cost which are the typical metrics of interest to investors and advertisers, then it makes better business sense to just focus on some priority user segments which are low-hanging fruits. So far the MV team has not imposed any such prioritization in its community mobilization efforts, but it is an important policy

decision on where to utilize, for example, investor funds to grow the user base Vs grant funds to focus on marginalized user groups.

4.4 Advantages and challenges in maintaining a strong offline network

We next cite several interviews of users, volunteers and managers, to understand nuances about the mobilization processes. A Jharkhand community manager explained the advantage of clubs:

“... This has considerably reduced our workload as earlier we had to coordinate with all the volunteers individually... reduction of coordination overhead made it possible for us to utilize our time better in guiding, motivating and organizing clubs, thereby easily replicating the club model in other blocks and districts as well...”

Users also expressed their positive opinion that with the local club channels they could now listen to hyperlocal news of their district. A 29-year old visually impaired user from East Singhbhum said:

“...I have only one passion and that's listening to news... Since I can't read newspaper and don't have access to television, MV is my only source of local news and information... when the clubs weren't formed, we got to listen to stories, messages and local news from different districts of Jharkhand that were occasionally from our region...we had no control over region specific content... after formation of clubs we are not only able to listen to the local events and happenings in our region but are also able to listen to statewide content... it is a win-win situation for us...”

The volunteers too have been empowered since MV has given them a unique identity in their villages and towns. A 24-year old, mother of two children, from the Ranchi Club in Jharkhand expressed:

“... MV has helped women like me, come out of our conservative households, build our identity as community reporters and stand for ourselves for finding solutions to our problems... Before listening to MV, my husband never allowed me to go out of the house to attend meetings, but ever since he started listening to MV he has encouraged me go for club meetings... he is positive that I'll learn something constructive out of it...”

Several volunteers have similarly reported that good references given by the MV community managers has helped them find better jobs, or the public speaking and content reporting skills they have gained have helped them in their job interviews.

Financial incentives in addition to the social recognition and skills imparted to volunteers, motivates them further in their work because they are able to supplement their income and can see a direct benefit emerging from working with MV [15]. As informed by an 18-year old female volunteer of the Ranchi club:

“... I have been able to pay my college fee and siblings' school fees with the money I receive from volunteering with the club... being a part of the club has improved my standing in community... people have started viewing me as someone who is working towards a social cause... money as appreciation and recognition of my efforts motivates me to work more enthusiastically for the club...”

However, mentoring and team building problems often surface in maintaining a strong offline network. In one instance the financial incentive policy was changed and caused significant dissonance. Volunteers were promised to be incentivized to refer new users to MV by SMSing the phone numbers of these users to the MV SMS gateway, or enter their numbers over an IVR interface. The intended methodology was that the volunteers would meet new users and tell them about MV before making the referral, at which point a call would be initiated automatically to the new users welcoming them to MV. The referral system worked very well in

the beginning - more than 25% of the referred users continued to call in to MV. However, this dropped to under a 5% recall over a few months due to misuse of the system - some volunteers started referring phone numbers they had obtained from mobile recharge shops, of users who had no prior awareness of MV. The referral system was quickly scrapped and a cap was imposed on the stipends released to the volunteers. Some volunteers however resented the discontinuation and a community manager expressed this strongly:

“... The policy was discontinued after a while, but it left a lot of volunteers and communities disappointed and dissatisfied, so much so that some of them snapped all ties with MV...”

From a data based perspective however, the referral system to acquire users brought lesser financial rewards on an average than the new model through volunteer clubs, plus the growth rates seen in the new model were more robust. The backlash therefore could possibly have been avoided with clearer communication and relationship management by the MV community managers.

Volunteer attrition also happens due to a mismatch in expectations. In some cases, volunteers joined expecting much higher stipends than what they actually ended up receiving. This again was largely a communication problem that could have been handled better. Some volunteers who were economically better off, such as the son of a bank branch manager in the district of Jamui in Bihar, reported on the other hand that financial incentives were not important, outlining the relevance of their own economic status in determining their level of participation on MV activities:

“I don't volunteer with MV for money, I don't pay much attention to the payments, and they are such small amounts anyway. I work with MV for social work and personal development...”

A similar instance came up in another scenario. MV community managers encourage volunteers to take important grievances of the people up to the government administration, although no separate financial incentive is provided for this. Many volunteers undertake such activities wholeheartedly, but a 39-year old club coordinator from East Singhbhum, Jharkhand in his narrative expressed:

“... It would be better if MV hires someone separately to handle the work of grievance follow ups at block level... there's a lot of running around to do... how much can a club coordinator and a handful volunteers run around? We also have to keep up with the community mobilization activities...”

It therefore seems that financial incentives are important to varying extents largely depending on the economic status of the volunteers. This finding is supported by a comparison of social Vs monetary incentive structures for community health workers in different countries [28]. It is found that social incentives such as community recognition seem to work when the participants independently have a steady source of income, which is the case with well performing clubs to the left in Figure 7. However, when participants are not economically well off they not only find it hard to invest time in social activities, the introduction of even small financial incentives makes the transaction monetary than social, which seems to be the case with clubs in the middle. Whether the joint responsibility for achievement of social objectives through the club structure is able to move the needle towards social markets, contrasted with individual motivation, will be insightful to analyze in more detail.

Clear communication and relationship management by the community managers is also important to maintain a good rapport with the volunteers and retain their trust especially when processes have been under constant flux during the formative stages of MV. Indeed, volunteer attrition rates do vary significantly across different community managers - the clubs in Bihar and MP are

stronger than the clubs in Jharkhand and Orissa. Interviews with the community managers revealed that each manager follows a slightly different approach with their clubs in terms of communicating policies, training volunteers and following up with them on club activities. The Bihar club managers monitor the volunteers and guide them on a week to week basis if their mobilization efforts are not visible in terms of increased call volumes, but the Jharkhand community managers do not practice such micro monitoring and run into issues of non-performance of their clubs since they are unable to keep track of the activity of volunteers in the field. The former strategy of continuous mentoring pushes the volunteers to continue to improve their mobilization efforts, while the latter strategy gives volunteers an impression that it is okay to slow down.

Another factor which has often caused disputes within clubs is the class and caste hierarchy in India. One club in Jharkhand had to be split because an extremely dedicated daily-wage labourer was elected as the coordinator, and the previous coordinator who was a well-paid NGO employee started disrupting the functioning of the club. In another club, a higher caste volunteer would often snub the quality of content recordings contributed by a lower caste volunteer, and had to be finally encouraged to segregate his geographic area of functioning so that “his users” would not have to listen to poor quality content contributed by the other volunteer. It is indeed challenging to find volunteers whose ideology is in sync with MV’s ideology so that they genuinely want to use the platform to support their communities. Such volunteers indeed value the platform and its vision more than the specific financial incentives it provides, and in case something goes wrong with policy communication or process changes, they try their best to communicate the problems and suggest solutions.

The MV team has found these observations to be useful and is putting in stronger internal training for its community managers, as well as structured training workshops for the volunteers and club coordinators. Uniform policies are also being created for volunteer recruitment to ensure that diversity is preserved but without compromising the ethos and values on which MV is built. Finally, volunteers are being trained to solicit advertisements from local businesses against which a commission is given to them to boost their income, over and above the stipends entitled to them.

5. IMPACT PROCESSES

The impact of MV can be examined at three levels: individual, community, and institutional. Below we give some examples.

5.1 Individual change

Impact at an individual level seems to happen either directly when information is posted on the platform about new opportunities that people can avail, or in a softer manner when users begin to feel empowered because of the self-expression outlets provided by MV.

A farmer from Dhanbad in Jharkhand attributed the awareness of an irrigation subsidy scheme that he was able to utilize after coming to know about it from a news recorded by another farmer on MV.

“I get information about a lot of government schemes from MV. It’s been two years since I got to know about Krishi Antrikaran Protsahan Yojana from MV. Within that scheme, drip irrigation equipment and pump sets are available at 50 percent subsidized rates. I (applied for that scheme) received pump set and drip irrigation system. It has helped me change the direction of my work (made my work easier).”

Empowerment through self-expression is another impact frequently seen at the individual level. Two community health workers from Ranchi in Jharkhand reported that when they were introduced to

MV they were shy and hesitant, both had trouble speaking in public and addressing large groups of people. Six months after using the platform - creating original content and reporting stories - they remarked that they felt far more confident in their ability to discuss health matters in the village and that the people listened to their advice more respectfully now.

Greater awareness and empowerment can in turn lead to behavior change, as a 21-year old student from Jharkhand reported:

“In the past one year I have heard campaigns on the issue of violence against women and I feel these are commendable efforts by team MV. These campaigns have given me the confidence to take up social work and I hope to help create a society that doesn’t encourage violence against women”.

5.2 Community level impact

When different stakeholders are a part of the same community, local media systems can help enforce checks and balances between them and build social accountability. Media also plays other important roles such as to enable knowledge sharing and to provide a rendezvous point for featuring cultural and traditional activities. In the future, we will examine from a theoretical standpoint what kind of community meshing a media service should have to be able to lead to collective action, but we give some examples for now.

On these lines, a caller from Giridih in Jharkhand reported:

“A few weeks back I recorded a message on JMV about a school headmaster harassing the students by charging Rs 10 per student for issuing the admit card. When a few students refused to pay the amount, the headmaster threatened to fail them in the practical exams. After my message was published on JMV, it spread like wildfire. Everybody got to know about the tactics of the headmaster. So the headmaster called a meeting of the parents and owned up to his mistake. He promised not to repeat such a mistake in the future and also appealed to the students to write their exams without worrying about all this.”

Media can also support collective action by helping people mobilize communities to take up causes important for them. In the Koderma district of Jharkhand, alcoholism among men is a big issue. People began to voice their concerns on MV with a desire to see an improvement, at first with a few stories, and soon followed by many people recording their messages. This finally prompted the volunteers to pick up the stories and write a letter to the district administration demanding closure of illegal alcohol shops in the main town of Koderma. Applying the empowerment framework [9] to the instances discussed above, it can be seen that the users’ sense of self awareness and identity attributed to MV helped them build authority and find solutions to problems by organizing themselves collectively for a common goal. MV provided them with the necessary capabilities [20] and opportunities to do this.

The reporting of breaking hyperlocal news has also demonstrated unique ways of impact. Parts of the Jamui district of Bihar have a significant law-and-order problem. A news was reported on the local MV club about looting of trucks and buses on a highway, which a passenger in a bus headed in the same direction heard on MV and alerted his driver to avoid the route. Other regional media did not carry news about the looting until the next day.

Public media systems are also important for community building. A 58-year old headmaster of a government school in Jamtara, Jharkhand highlighted that MV was helping in the revival of their local cultural heritage, which was otherwise being lost to an increasing globalization of cultural interests.

"... It is ironical that popular culture of hindi movies has penetrated our otherwise remote region and the youth here have been more interested in movie songs than our folk songs... Most cultural heritage remained limited to the villages of the region due to lack of a medium to promote the aural culture of the village.... Now owing to MV, we are able to listen to self-composed folk songs and poetry in local dialects such as Khortha, that are recorded by other users. This has led to more MV users, especially youth embracing our cultural heritage..."

Another important role of local media is in fostering knowledge exchange and inspiring others. A 32 year old farmer from Dhanbad, Jharkhand shared his experience with check-dam initiatives for water conservation, and encouraged others to replicate the efforts.

"...During the monsoons, the rivulets near our village used to get flooded and excessive water used to flow down the Damodar river... we were unable to make any use of it... for the past 4-5 years we have started building check dams on these rivulets and created bunds of water out of them... this has not only resolved our water shortage issues but has also helped in recharging the water table... we now get drinking water all year round..."

5.3 Institutional impact

Although all government welfare schemes have complaint hotlines, people either do not know about them, or are unable to use them easily because these ordinary beneficiaries are often limited in their capability to provide all details sought by the staff manning the helplines, and often they also have little faith in getting a redressal since it is hard for them to follow-up on the status of their complaints. Online systems are also broken or not accessible to the people, and offline mechanisms like registering RTIs (Right to Information) cannot be undertaken easily by poorly literate rural citizens. As a social activist from Dhanbad, Jharkhand expressed this comprehensively in the context of NREGA:

"... People working under NREGA have often asked me to help them make calls on the helpline as they found it difficult to get through, the phone would keep ringing and no one would pick up... When I called on the helpline, I encountered the same issue. However, after multiple attempts, when I got through, the person at the other end of the phone mostly appeared to be unhelpful. After I registered the complaint on behalf of a worker nothing happened... whenever we called to follow up on the complaint, neither were we informed about the status nor were we told anything about the mode of investigation... So, we stopped calling on the helpline..."

With grievances reported on MV, although MV volunteers play a similar role as social activists by handholding citizens to get a redressal for their problems, the marked difference is that the grievances are made public on the forum instead of just being registered as an individual complaint on a hotline or a government department. This public exposure seems to improve the success rate by making the authorities more accountable, as also reported on the CGNet Swara platform [13]. Institutionally, MV further endeavors to maintain a positive relationship between the volunteers and the administration, and leverage this rapport to ensure resolution rather than appear antagonistic. This is a delicate balance however and we hope to investigate the effect of people and institutional relationships on grievance redressal in detail in the future. For now, we outline at least two mechanisms which seem to be working by balancing public exposure for accountability but in a positive spirit.

The MV community managers proactively introduce volunteers to district and block level government officials. Once an introduction has been established, the volunteers frequently visit them especially

during openhouses organized by the officials to interact with citizens. During these openhouses, the volunteers put forth grievances from their areas, and aim to record a verbal commitment by the officials on redressing the complaints. Sometimes the volunteers even use the IVR to forward voice messages as reminders to the concerned officials. In one such case, a farmer from Jamui, Bihar attributed the success as follows:

"... We applied for a crop failure subsidy with the Block Development Officer (BDO) previously, but he refused to accept our application without stating any reason... MV volunteers then helped us get the subsidy released when they interviewed the BDO for their weekly Janta Darbar program pushing for greater accountability and the course of action for current week's issues and reports on the status of previous week's grievances..."

In another initiative in the case of broader problems, an IVR based petition is floated on MV, and an official letter is sent to the administration mentioning the count of pledges and details of the problems. A community Manager for Bihar shared an example:

"... the volunteers decided to highlight the inconsistencies in the mid-day meal scheme in their district... meals weren't being provided to the students as per the norms or were stopped entirely. A short message informing people of their children's entitlements and current irregularities was created and aired on the club. People were asked to press number 9 if they had witnessed these irregularities and wanted authorities to act on them. We received close to 2000 pledges and used this count to write a letter to the District Education Officer (DEO). The DEO wrote back that he had constituted an investigation team. He further invited the volunteers to monitor the scheme, who now do this at the school level..."

Such methods have been quite effective and dozens of impact stories have been documented. Release of six months pending wages of school teachers, dispatch of fumigation equipment against malaria after a series of deaths in a village, fines imposed on officials who were taking bribes for beneficiary enrolment, pointing out illegal use of machinery in NREGA works, and highlighting stone smuggling to police officials which eventually led to a crackdown on these activities, are some stories of impact.

For MV however, assisting in grievance redressal goes beyond its mandate as a community media platform. As part of a funded project, a more systematic process has also been developed to address grievances on a public micro-health insurance scheme. Under the scheme, a cadre of village extension volunteers is being developed by the government - grievances coming in to MV are assigned to the corresponding volunteer from the location, who then over an IVR system can provide updates about the grievances delegated to them. Such a system nicely formalizes a linkage between MV and the government department, each being able to preserve its own distinct mandate while recognizing the importance of an intermediary-assisted grievance redressal model.

Another route to institutional change is by leveraging partnerships with regional media houses. MV ran a campaign to collect data on the quality of health services provided at the local health centers across three districts. The campaign came back with findings that almost 90% of the health centers did not have clean drinking water, more than 50% of posts for doctors were vacant, and doctors were often absent from the clinics. A campaign report about the findings was featured in a leading Hindi regional newspaper. The clout of mass media pushed the authorities to improve the health services, and within a week of the news report several testimonials were received about at least five facilities which had improved.

Citizen driven institutional changes in one place can also spread to other places. A volunteer reported how a widow pension case which was reported on MV got solved with assistance from the state Labour department, and quickly spread to the entire state encouraging people to fix processes with their own villages.

“...We raised the issue of the death of a migrant labour on MV during a campaign, who died while migration (on worksite) due to poor working conditions... MV interfaced the issue with the labour department of Jharkhand in Ranchi from where the commissioner personally looked into the issue... commissioner further used MV to inform all of us to register ourselves in our village councils before migrating out... When we informed them that our village council members haven't received training on documenting people migrating, the Labour department conducted migrant registration awareness and trainings camps in many blocks and districts including ours...since then they have actively been following up on our migration related grievances/issues that we report...”

We can see therefore that especially for institutional change it is important to plug MV with various local stakeholders including government departments, NGOs, social activists, and others who can make use of the information published on the platform. We plan to gather more insights going forward to understand effective ways and best practices for managing this network of stakeholders.

6. CONCLUSIONS

By outlining the operational details of three critical functions to run a mobile-based community media platform – content management, community mobilization and training, and institutional linkages for impact – our effort in this paper has been to highlight the importance of non-technological aspects to enable what was primarily a technology driven development intervention. Each of these functions was built and refined upon noticing gaps through continuous feedback loops with users, and outlines the importance of staying closely in touch with the target beneficiaries. The challenges faced in building and maintaining a large offline network of volunteers to support the platform, further illustrate the importance of human resource management and communication processes that need to gel with prevalent cultural and social norms. The relevance of offline processes to drive technology adoption, build credibility for the system in the eyes of the community, and provide a bi-directional communication conduit between the organization and its users, emphasizes the need to institutionalize these processes. Finally, we show that to achieve impact via a media platform requires it to be closely meshed with the local community and with other stakeholders such as government departments, to ensure that participation leads to effective action.

The relevance of people processes and individual motivation to the success of the program somewhat dampens the assumed easy route to scaling and replication through technology based interventions. This adds to our refrain that appropriate training and mentoring, with an alignment of incentives, is important to ensure that the effectiveness of tightly controlled pilots scales when the models are replicated with increased layers of organizational management. MV's success so far in replicating its model is encouraging, and that it should be able to take on the challenge for further scaling.

We have not touched upon the problem of making community media platforms financially sustainable. This remains another ongoing challenge to bring sustainability through a combination of public funding, sponsored programs, advertisements, and premium paid services, which will be a strong determinant of MV's future.

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Supplementary Information: Design Lessons from Creating a Mobile-based Community Media Platform in Rural India

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1. APPENDIX: MV CONTENT FORMATS

As mentioned, MV was initially a system for activists, but the community it aimed to reach was more diverse comprising of farmers, students, women, children, and youth. Each group has different information needs. To cater to these groups, effort was not only required in bringing these different groups on board, but also the creation and solicitation of content relevant to them. Users who were mobilized to participate on the platform mostly belong to low income groups; live in rural areas; are farmers, students, daily wage labourers, home-makers, self-help group workers; below the age of 30 years; and have very little access to mass media sources. A wide variety of programs are produced for them. Subsequent sections describe some of these programs.

Time	Schedule
4-4:30 PM	Employment News
4:30-5 PM	User Generated Content - Local Event Updates
5-6 PM	User Generated Content - Songs and Poetry
6-7 PM	Agriculture Slot - Q and A with Expert
7-8 PM	Campaign on Elected Women Representatives
8-8:30 PM	User Generated Content - Local event updates

Figure 8.1. Sample of a Mobile Vaani schedule

1.1. Occupational Programs

There are two programs in this category. The first is a bi-weekly feature that informs users about employment opportunities available locally in their area. The hyper local nature of vacancies make this information difficult to be made available over other mass media channels. The second program is a Q&A with agricultural experts where farmers can leave their queries on MV and an expert from a local partner NGO answers these queries on a weekly basis. People like this segment because of the contextual relevance of the questions asked. Many people have testified that although they have never directly asked a question for this program but listening to expert's responses to questions left by others have helped them immensely in maximizing crop yield, saving crops from various pests and getting useful information about government subsidies on various farming implements.

1.2. Entertainment Programs

The entertainment segment produces programs from user generated content shared on the forum. Contributions in the form of poetry, folk songs and jokes are solicited from the users and are then segregated for producing different programs. Poetry and folk songs are played together in a weekly program called *Aapki Mehfil* (translating to *Your Gathering*), and jokes are presented in a humorous exchange between two funny commentators. Programs featuring storytelling are also produced for children and youth.

1.3. Educational programs

This weekly program is conducted by teachers from rural government schools who teach science and humanities subjects. They instruct students on how to study in a structured manner for their matriculation and secondary board exams, and give tips on career counselling.

1.4. Health Programs

Many health programs have been produced with a focus on women's nutritive, reproductive and sexual health. These have often been produced as audio dramas where the audiences are introduced to health disorders, their preventive measures and cure. The programs are made engaging by inviting people to ask questions or narrate their experiences, which as described earlier lends significant contextualization to the topics being presented.

1.5. Activism based programs

Two programs are being produced under this category. The first program called the *Jan Shakti Abhiyan* (translating to *Power to People Campaign*) petitions users for endorsement on grievances by a simple call-to-action to press a button on their phone to "sign the petition". Every month, a different government program is selected for this segment after discussion with the field volunteers based on the grievances received on MV. So far only the count of signatories to the petition is shared with the authorities, without giving any details of the signatories themselves.

The other program within this segment *Janta Darbar* (translating to *People's Court*) is entirely based on the effort of MV volunteers in several clubs who discuss grievances from their area with the government officials during weekly openhouses, and take regular follow ups regarding previously registered grievances. They even record interviews of the officials to inform the users on a weekly basis about which issues were discussed and resolution steps taken.

1.6. Emotional Interest Programs

This segment produces two programs. One program known as *Haat Bazaar* (translating to *Stories of Bazaars*) solicits case studies from the community to portray the life struggles of people who come to sell their home grown agricultural produce or home-made pickles, spices and condiments in local markets. This five minute weekly segment covers aspects of people's lives through their origin, education, dreams, family life and challenges of current jobs. Users appreciate this program as they are easily able to relate to them.

The other program titled *Bolein Dil ki Baat* (translating to *Pour your Heart out*) asks users a different question every week about the memories they cherish and observations they make about simple things of their lives. For instance, users were once asked to recount their experiences of watching a movie in the cinema hall for the first time. The essence of this program lies in its simple ways of striking a chord with the hearts of people. It is a particular favourite of many listeners as its simple questions evoke nostalgia.

1.7. Hyperlocal news

Hyperlocal news is one of the most prominent and in-demand features of MV. It is run in a meticulous manner in many clubs where volunteers collect news by making regular visits to the block office to keep a tab on various issues being reported, the police station to check for FIRs/cases registered, and various events including protests, demonstrations, political rallies, community fairs, etc. After having collected the necessary information they present a comprehensive 2-minute news report on MV. Whenever possible, they also record interviews of key stakeholders to establish greater credibility and triangulate viewpoints on the series of events. The MV community managers provide a detailed training to the volunteers for this news collection and reporting process. Efforts are also underway to do a daily evening news bulletin in each club summarizing the key news reports that have come in through the day, and also pick relevant headlines from the regional media and newspapers.

Table 8.1. Year wise Content Evolution on MV

Year	Content Format	Content Topics
1	i) Monologue based assorted User Generated Content ii) Focused solicitation using narration	Community grievances; Cultural expressions; Personal experiences; Opinions; Stories of local interest; Information about government programs, health and agriculture; Generating discussion on these topics by recording narratives around them
2	Campaign Methodology using dialogic techniques of conversation, interviews and drama, along with monologues and focused solicitations	Campaigns on Health, Gender, Governance and other relevant social issues
3	Program Production using multiple formats such as conversation, interview, drama, song, poetry and expert opinion (talk)	Programs providing info regarding agricultural practices, employment opportunities; emotional interest programs on memories, people's struggles; entertainment programs featuring folk songs and jokes

2. APPENDIX: MV GROWTH STATISTICS

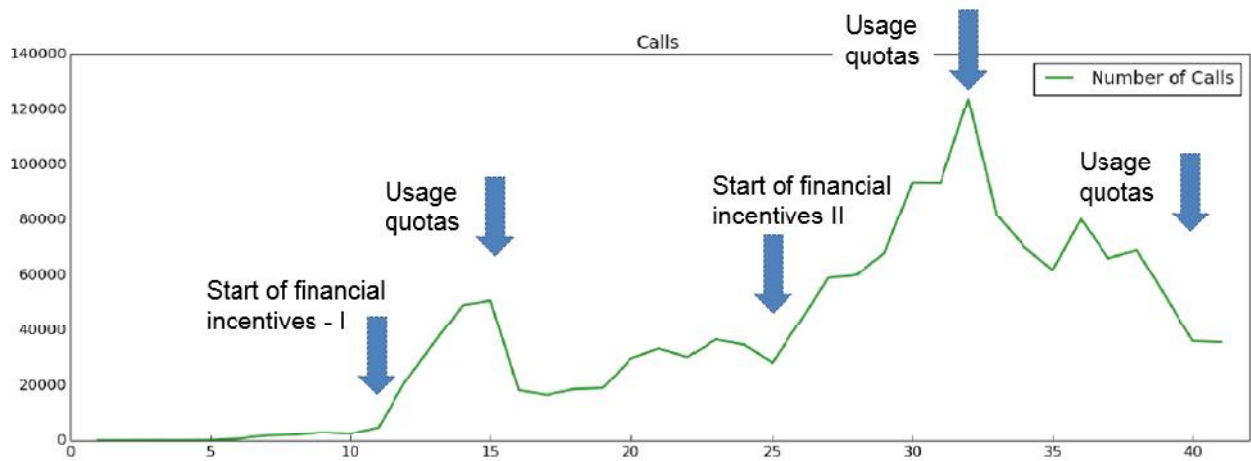


Figure 9.1. Call volumes for the Jharkhand main channel. Financial incentives to volunteers and a robust user engagement model helped achieve 15% month-on-month growth rates. However quotas had to be imposed repeatedly to push down the call volumes to manage cash flow. Different forms of quotas were imposed at different times, for example, to open up the system for only a few hours in the morning and evening, or return not more than two missed calls per user per day, or return not more than a certain number of calls on a channel per hour. More than 50% of the MV operational costs are on phone bills to keep the system free for users.

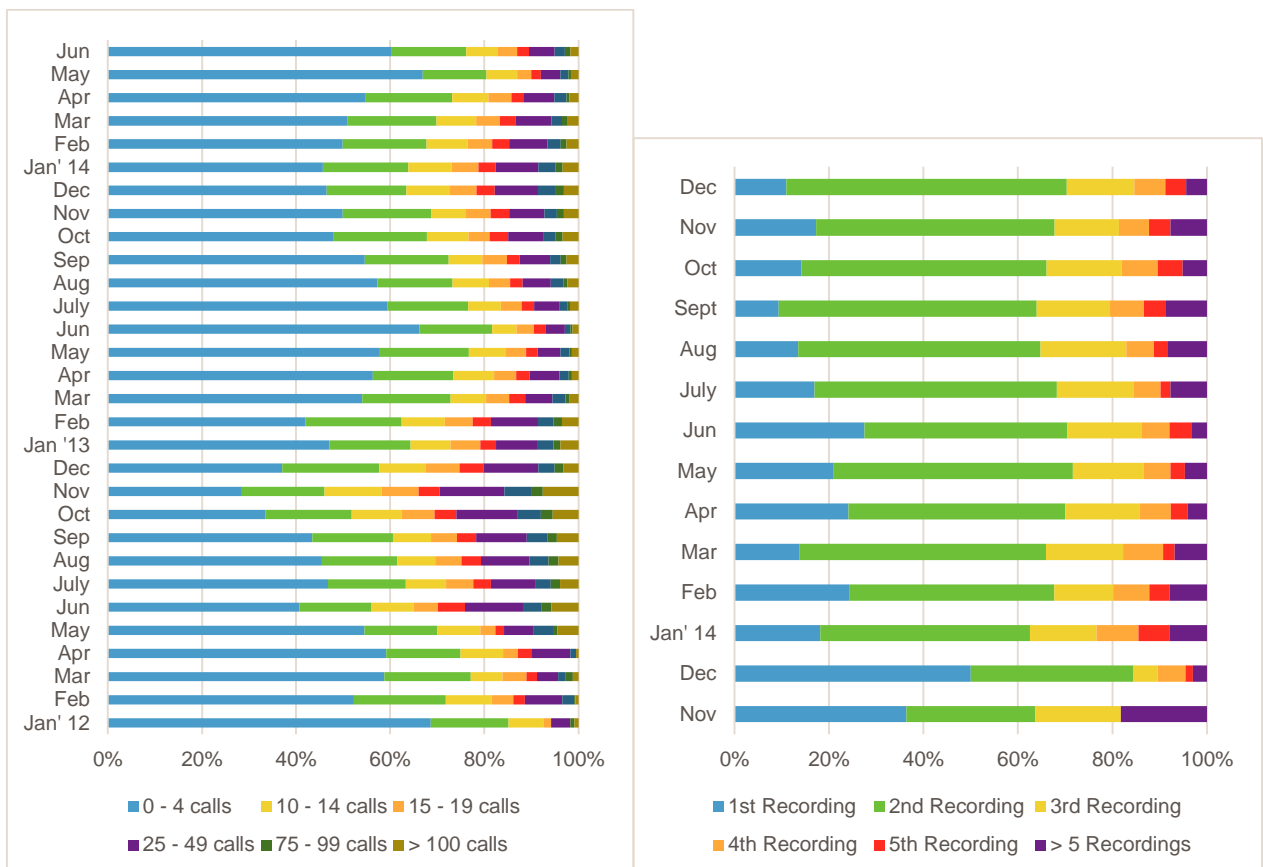


Figure 9.2.a) Calls per user. User retention dips significantly when quotas are imposed since users do not get a good quality of service and hence drop out, **b) Number of calls before a publishable recording was successfully done.** More than 80% of the users are able to make successful recordings by their 3rd attempt on MV

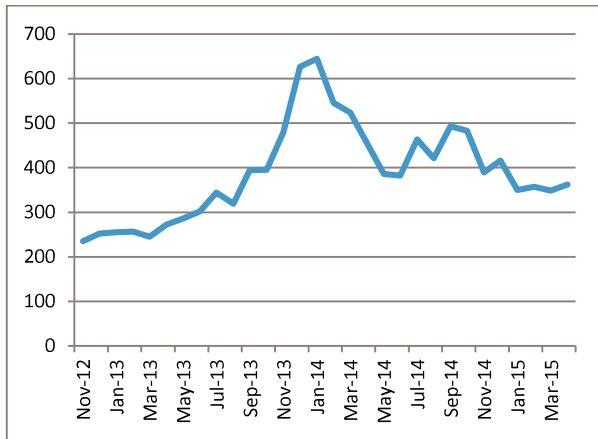


Figure 9.3. Average listening duration per call, in seconds. Limits on duration per call were imposed in Jan 2014 to push down the maximum call duration permitted per call to 8 minutes, after the average call duration rose to over 10 minutes

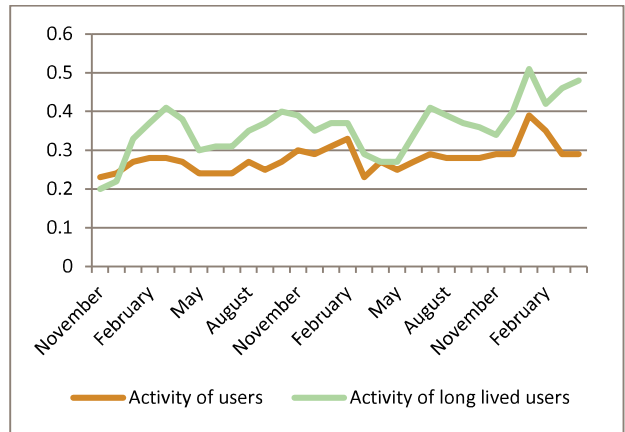


Figure 9.4. Daily average users/Monthly average users ratio. A value of 1 means that users call each day, a value of 0.5 can be roughly interpreted as users calling once in two days. The ratio improved significantly with the launch of regular programs on MV