Emergent Practices Around CGNet Swara, A Voice Forum for Citizen Journalism in Rural India

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ABSTRACT

Rural communities in India are often underserved by the mainstream media. While there is a public discourse surrounding the issues they face, this dialogue typically takes place on television, in newspaper editorials, and on the Internet. Unfortunately, participation in such forums is limited to the most privileged members of society, excluding those individuals who have the largest stake in the conversation.

This paper examines an effort to foster a more inclusive dialogue by means of a simple technology: an interactive voice forum. Called CGNet Swara, the system enables callers to record messages of local interest, and listen to messages that others have recorded. Messages are also posted on the Internet, as a supplement to an existing discussion forum.

In the first 21 months of its deployment in India, CGNet Swara has logged over 70,000 phone calls and released 1,100 messages. To understand the emergent practices surrounding this system, we conduct interviews with 42 diverse stakeholders, including callers, bureaucrats, and members of the media. Our analysis contributes to the understanding of voice-based media as a vehicle for social inclusion in remote and underprivileged populations.

1. INTRODUCTION

The rapid penetration of mobile phones in low-income regions of the world has triggered widespread interest in building mobile systems and applications for the benefit of education, health, government, and other social ends. Recently, some projects in this space have emphasized the role of users as active participants and producers of information, analogously to Web 2.0 [1,4,29,38]. Participatory processes are of particular interest to development practitioners since they encourage accountability, local ownership and problem solving, and situate a broader share of power, decision-making and influence with communities rather than with outsiders [25]. And as a medium for increasing or enabling participation, mobiles hold particular promise [16] due partly to their support for voice communication. The spoken format transcends literacy, typewritten text, and local language / font issues, and is accessible from any handset.

In this paper, we offer a case study of a citizen journalism network, previously reliant on computers and the Internet, and examine its evolution as it adopts a voice-based interface for recording and listening to information over the phone. The focus of our study is CGNet, which targets the Indian state of Chhattisgarh. In the words of its founder, "CGNet is the people's website of Chhattisgarh, where everybody is a journalist. It is a citizens' journalism forum whose mission is the democratization of journalism, where journalism is not restricted only to journalists." [7] Since 2004, the CGNet website and mailing list has provided a forum for discussion of the Chhattisgarh region, specifically for issues related to its development and people. While the site and mailing list are very active, with over 230 messages per month, the dependence on the Internet made it difficult for rural communities – those most impacted by the issues at hand – to access or contribute to the dialogue. Internet penetration in Chhattisgarh stands at 0.5% [22].

Out of this ecosystem was born CGNet Swara[1]: a portal to CGNet which utilizes mobile phones to extend participation beyond the reach of the Internet. Users of CGNet Swara place an ordinary phone call to the system, which presents them with two options: press 1 to record a message, or press 2 to listen to other messages. Recordings are moderated by a trained journalist prior to being published on the channel. Published recordings are accessible both via the phone, and via a website,[2] where they are also summarized in textual form. Often, CGNet Swara staff seek to spur action on the reports by disseminating them to contacts in the mainstream media as well as in the government. In the first 21 months of its deployment, CGNet Swara has featured 1,100 reports and has logged over 70,000 calls into the system. As detailed later, some reports have led to redressal of important grievances for the benefit of local communities.

Our goal in this paper is to understand the usage, perceptions, and impact of this platform as it transitioned from CGNet to CGNet Swara. We start by characterizing the content on the system, via an analysis of over 1,000 voice recordings. Then, we examine the social ecosystem that created (and was created by) the platform, via interviews with 42 diverse stakeholders: contributors, listeners, the moderator, and external actors such as journalists and government authorities. Based on analysis of these conversations, we identify three themes: the experience of users interacting with the voice interface, the emergent practice of using the platform as a mechanism for grievance reporting, and the complex relationship between CGNet Swara and established

[1] "Swara" is the Sanskrit word for "voice"

[2] The CGNet Swara website is distinct from the CGNet website. It is available at http://cgnetswara.org/

media outlets. We conclude by positioning our inquiry into CGNet Swara at the intersection of overlapping but distinct academic discourses in addition to ICT4D, spanning citizen journalism, community informatics, and e-governance/transparency.

Before we proceed, a note is in order regarding the approach of this article. Our primary tone is one of external examination and critique, as the first two authors played no role in the creation of CGNet or CGNet Swara. However, the third author is a member of the technical team for CGNet Swara. He facilitated this study by providing call logs, contact details, and system analytics to the other authors. While this study was done with the knowledge and consent of the full CGNet Swara team, the conclusions reached are not necessarily representative of their views.

2. RELATED WORK

The devices we call "mobile phones" offer varied bundles of features and affordances, made more powerful by their networks, and the off-device protocols running on servers in data centers. Technologists and development practitioners can (and have) built applications to take advantage of SMS, USSD, MMS, still photos, video upload and playback, and the broader Internet via the data channel [10]. Their decisions involve oft-debated tradeoffs between affordability, richness, and reach. And yet, every handset on the planet has a microphone and a speaker, and voice is as close to a universally shared approach to communication as humans have. Voice is not a panacea; it can be linear and hard to search, languages are fragmented, and phone calls can be costly, relative to other messaging channels. But in many circumstances, voice interfaces offer ubiquity, affordability, and ease of use [16,30].

Thus it is encouraging to see a burst of voice applications tackling a variety of problems in development and resource-constrained settings. Examples include giving voicemail to homeless individuals in the US [9]; offering ad-hoc group support for NGOs [27]; delivering health information [36]; bringing web content to resource-constrained classroom settings [13]; and exchanging agricultural advice for [32] and by [29] farmers in India.

Some voice projects stress navigation of voice menus, others leverage speech recognition, others try to capture and retain voices of contributors. These last systems are perhaps the most interesting for those seeking to facilitate participatory processes among communities where low literacy or other factors reduce access to or use of other media (from letters to the editor to blogging). Specific voice-based implementations have begun to blur the lines between mobile handsets and community radio, allowing communities with little or no capacity to create text-based content to be both producers and listeners of the "stories" they want to tell and agendas the want to set [3,23,33,37,38].

Yet many of these community platforms remain pilots or experiments; the deployment of broader systems for sustained use in the field remain rare. A 2010 review of citizen media by OSI suggested that "Very few of the projects we documented report back to citizens via text or voice systems about the information they have collected. Aside from CGNet Swara, only the Budget Tracking Tool in Kenya and the African Elections Project allow citizens to access, rather than only report, information via non-Internet-connected phones." [2] (p 35)

[1] http://code.google.com/p/swara

3. EVOLUTION OF CGNET SWARA

The geopolitical context for this work is Chhattisgarh, a small state in central India that was formed in 2000. Chhattisgarh consists of primarily indigenous people, called Adivasis, who are amongst the most poor and socio-economically disadvantaged in all of India. Of the state's 25 million inhabitants, 80% live in rural areas, and 30% are illiterate. The area is also home to the Maoist insurgency, a violent left-wing movement. In 2007, the Indian prime minister, Manmohan Singh, designated this insurgency as the biggest internal security threat facing the country.

Chhattisgarh is a difficult environment for the media. Due to a shortage of trained journalists in rural areas, there are no established news sources in tribal languages such as Kurukh or Gondi, each of which have over two million speakers. The situation is worsened by draconian regulations surrounding community radio in India: in addition to the high cost of establishing a community radio station, it is not legal to broadcast or discuss news via community radio. While newspapers and television stations have a presence in the state, very rarely do they cater to the needs and voices of the Adivasi population.

CGNet aimed to address this need by providing a platform for members of tribal communities to report and discuss issues that are meaningful to them. Reports from such "citizen journalists" flowed through personal communication to a CGNet moderator, who broadcasted the story for discussion on the CGNet website and mailing list. Since its establishment in 2004, CGNet has been recognized [41] as fostering dialogue and affecting change within the state. Its mailing list has over 2,000 members. However, due to the dependence on computers and Internet, most of these members are drawn from the urban, English-speaking elite.

The impetus behind CGNet Swara was to extend the reach of CGNet to anyone with access to a low-end mobile phone. As described previously, callers can record stories and listen to other recordings by navigating a simple interactive voice response (IVR) system. Recordings, which are a maximum of 3 minutes long, undergo moderation to ensure they are clear, audible and appropriate for dissemination. Once the moderator approves a post, it is available for listening on both the phone and the Internet website. The website also includes the moderator's textual summary of each post (typically translated to English, though occasionally left in Hindi) to facilitate search and browsing. To keep the phone line available for multiple callers, only the four most recent posts are available for playback via the phone. Callers may skip to the next post by pressing a key.

The technology underlying CGNet Swara is relatively simple. Following a vision established years ago [24], a Linux server utilizes Asterisk (an open-source telephony platform) in combination with LoudBlog (an open-source audio blogging platform) to provide the key functionality. The logic of the IVR system is written in python and is available as a free, open-source download[1]. The server utilizes three GSM modems (Topex Mobilink IP), available for about $500 each in India, to interface with mobile SIM cards. It also connects to a pair of BRI digital landlines (supporting two parallel calls each) to support the original phone number publicized for the system.

The cost of airtime is an important consideration for any system utilizing voice calls to report and disseminate information. During the first six months of the CGNet Swara deployment, the costs of the phone calls were supported by the callers themselves. However, as the server was based in Bangalore, this represented a

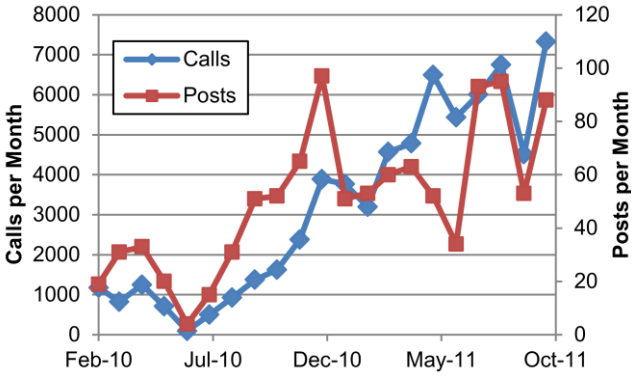

Figure 1: Monthly traffic (calls and posts) to CGNet Swara. The dip in June 2010 was due to an outage while the server moved to a new location.

long-distance call from Chhattisgarh and CGNet staff became concerned that this (temporary) geographic anomaly was artificially stunting the expansion of the service. Thus, starting in August 2010, calls to CGNet Swara became free for a limited period (which is still ongoing). Rather than using a toll-free number, which can be costly in India, callers are asked to send a missed call to the server, which it returns immediately. Since it is free, and very common [11], to send a missed call in India, this incurs no inconvenience or expense to callers. The cost borne by the server is approximately Rs. 0.60 ($0.013) per minute.

4. DEPLOYMENT & USAGE STATISTICS

CGNet Swara was deployed in February, 2010. The deployment was initiated via a two-day training camp, attended by 29 students, social activists, and other residents from across the state of Chhattisgarh. It was led by the CGNet founder, a former BBC journalist who also serves as the principal moderator for CGNet and CGNet Swara. The camp included an introduction to citizen journalism as well as practice sessions for interacting with the technology. While this event was important to raise visibility of the service, of the 20 trainees who owned cell phones at the time, only two were active users six months later. Thus, awareness and participation in the system spread mainly by word of mouth.

As of November, 2011, CGNet Swara has received a total of 70,500 phone calls and has posted 1,100 recordings (see Figure 1). Currently it publishes about 3 new posts per day, and receives approximately 240 calls per day; thus, the vast majority of callers are only listening to content. The posts on the system were contributed by at least[1] 366 distinct callers. As in many systems hosting user-generated content [26], the 10% most active contributors are responsible for a large fraction (49%) of the posts. There are 9,100 distinct callers who have listened to content on the system; of these, 1,495 are "regular" callers (have called 10 or more times) while 3,800 people called the system only once. The 10% most active listeners are responsible for 62% of the phone calls. The average phone call is 3.5 minutes long, and the server streams approximately 14 hours of audio content per day. The system is growing steadily, with roughly 30 new contributors authoring a post each month, and 600-700 new listeners calling in for the first time.

[1] Caller ID was unavailable for the first six months of the project. Thus, the number of distinct callers is actually higher than reported.

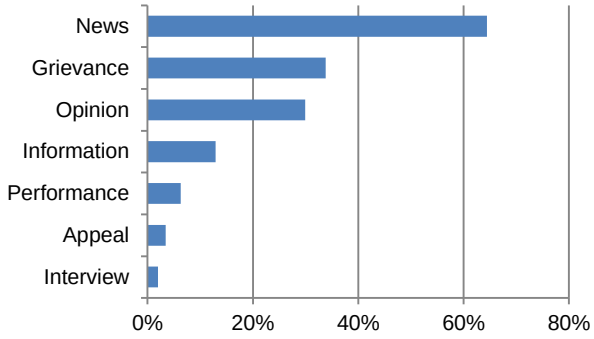

Figure 2: Histogram of 20 months of CGNet Swara posts by type. A post may be assigned more than one type.

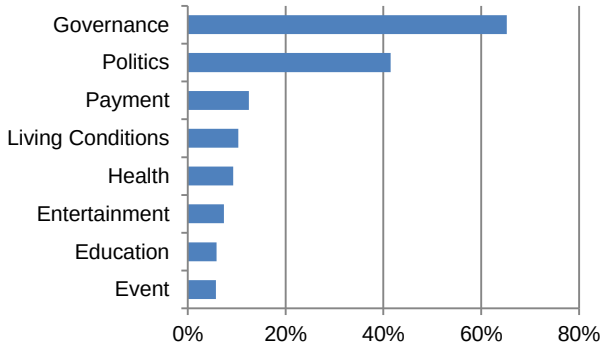

Figure 3: Histogram of 20 months of CGNet Swara posts by subject. A post may be assigned to more than one subject.

4.1 Content of posts

To characterize the content on CGNet Swara, we informally categorized all of the stories published during the first 20 months (n=1012). Figure 2 shows the results by content type, while Figure 3 shows the breakdown by subject matter. Apart from news, the most common type of post was grievances, which related to a variety of livelihood and civic issues. Grievances constituted 34% of all posts and ranged from disparity in insurance rates received by farmers to a demand for better wages for laborers. Of this, non-payment of wages under a National Rural Employment Guarantee Act (NREGA) formed the bulk of grievances. The act was formulated in 2005 and guarantees 100 days of manual unskilled labor per year, paid at a rate of Rs. 100 ($2.22) per day, to willing adults.

Some types of recordings we did not expect. For example, reports categorized as "performances" represent song and poetry, often rich in cultural tradition. Consistent with unsolicited performances observed on a different voice forum [29], it may be that the universal unmet need in rural India is the desire to sing! The moderator did not discourage such submissions, as celebration and preservation of tribal culture is fully within the scope of CGNet Swara. Often these messages also had social overtones.

To gain additional insight, we performed a more detailed coding for two months of reports (Dec 2010 – Jan 2011, n=110). During this period, 85% of posts were in Hindi, 10% were in Kurukh, and the remainder contained other tribal languages. To the best of our knowledge, this represents the first source of aggregated news in the Kurukh language. Looking forward, the CGNet Swara team aspires to solicit more content in tribal languages.

During the focus period, 69% of contributors were male. 90% of the contributors revealed their name while the rest claimed to be speaking on behalf of an organization. Around 82% chose to reveal their location details. Almost 70% of the content was concentrated on very localized issues as compared to issues that were of significance at a state or national level. Almost 20% of posts pertained to NREGA grievances. 21% of the contributors were recording messages to intervene on behalf of someone else's grievances and around 45% of the contributors were reporting on personal experiences or eye-witnessed events.

4.1 Anecdotal impact

There have been several cases in which reports on CGNet Swara have led to a measurable impact on local communities. Usually this impact originated with actions taken by the moderator of CGNet Swara, as he lobbied mainstream media and government officials to follow-up on a given report. Impact stories are detailed on the CGNet Swara website; here we offer just one example.

This story relates to overdue payment of NREGA wages, a theme described previously. A CGNet Swara contributor associated with an NGO in Sarguja, a northern district of Chhattisgarh, used the service in an attempt to help a man named Pitbasu Bhoi to receive the wages due to him. The urgency of Pitbasu's situation was rendered even more poignant because he needed money to provide medical care for his son. Pitbasu's case was presented in a series of calls to CGNet Swara. While the first call highlighted his struggle for payment, the next recording informed listeners of Pitbasu's son's death as he was awaiting payment for his labor.

The incident, which was brought to light via reports on CGNet Swara, immediately led to a series of reports in two of the most widely circulated newspapers in India (The Times of India and The Hindu), as well as the BBC's Hindi edition. This publicity, in turn, prompted government officials to expedite the payment of Pitbasu's wages, which were delivered within two weeks of the first coverage on CGNet Swara. A subsequent recording on CGNet Swara thanked the system for help in securing wages and urged listeners to record more cases of non-payment so that their grievances could receive similar redressal.

While a comprehensive impact assessment is beyond the scope of this article, anecdotes such as this one provide a powerful example for the potential role of CGNet Swara in garnering attention and affecting change with respect to specific problems. We explore elements of this potential, emergent role in the rest of the paper.

5. QUALITATIVE METHODS

5.1 Data collection

The data reported in this study was primarily collected using face-to-face and telephonic interviews as well as field observations. One of our goals for the qualitative research was to understand how users and other stakeholders perceived and used the system, perhaps in ways that differed from the founders' expectations. Hence, care was taken to ensure that the questions posed to the respondents avoided terms such as 'news', 'journalism' and 'information'. Instead, respondents were asked questions such as, "How would you describe CGNet Swara to someone?" and "Who do you think listens to you on CGNet Swara? Why?"

Respondents for the study were recruited through the call logs captured by the CGNet Swara system. Once contact was established, we asked for permission to conduct and record an interview. Participants were free to opt out of the recording, or to opt out of the interview at any point of time. Respondents were assured of the privacy of the conversation and were explicitly told that the conversation would not be played back publicly or broadcast on CGNet Swara.

To complement the interviews, a field visit lasting 2 weeks was undertaken to four districts in Chhattisgarh. Contributors were observed and interviewed in a variety of contexts, such as public meetings organized to protest against non-payment of wages, sites that were experiencing land acquisition threats, and beneficiaries whose grievances were resolved as a consequence of recording on CGNet Swara. Taking note of the high number of wage-related (NREGA) grievances, a visit to the complaint cell set up by the state was also undertaken to interact with the government staff working there. In addition, we interviewed mainstream news journalists reporting from the state capital of Raipur, and well as senior bureaucrats of the state.

A total of 42 interviews were conducted including that of the CGNet Swara founder (who also serves as its moderator). Of these, 17 were content contributors, 14 were listeners, and 2 were beneficiaries of the service. 3 bureaucrats and 5 journalists were also interviewed. 17 interviews were conducted via telephone; the other 25 interviews were conducted face-to-face. Most interviews (34) were conducted in Hindi, while the rest (8) were conducted in English.

5.2 Data analysis

All interviews that were conducted in Hindi were translated into English; all were transcribed for review and analysis. The analysis for this paper is informed by the constant comparative method of grounded theory [15]. Through this process of induction, five initial broad categories emerged during mid-fieldwork debriefs and during transcription and coding: a) broad usage trends of the portal, b) the significance of using mobile phones to report information, c) the interaction with and usage of an interactive voice portal, d) the emergence of grievance reporting as the most impactful use of CGNet Swara, and e) tensions that surfaced in the process of CGNet Swara establishing itself as an alternative communication medium.

In the later stages of our analysis and discussion, we aggregated these five domains into three, which are presented below. We describe, in turn, the experience of users interacting with the voice interface, the emergent practice of using the platform as a mechanism for grievance reporting, and the complex relationship between CGNet Swara and established media outlets.

6. QUALITATIVE ANALYSIS

6.1 What does voice add?

6.1.1 Different contributors

The builders of the system sought to allow anyone in Chhattisgarh to participate in the practice of journalism. 22 of 31 callers provided demographic information (the sensitive nature of the context most likely led the others to be careful with their identities, especially during phone interviews). Of the 22 interviewed callers who provided demographic information, all were literate and possessed at least an 8th grade education. Most (82%) were male. Several respondents worked as social activists, though others worked as laborers, construction workers, journalists, or other positions. All of the respondents read the newspaper, while 72% watched news on TV. However, Internet use was scarce; only 2 interviewees mentioned using the Internet as a source of news. Our interviews were not numerous enough nor randomly selected enough to represent all CGNet users, but initial indications are that a savvy subset of residents took

advantage of the system. It was Hindi-speaking activists and NGO workers, albeit non-Internet-using ones, rather than disadvantaged members of the community, who interacted heavily with the system itself. However, these individuals also enabled intermediated usage [35] by a broader set of people.

The lack of direct, broad-based usage could be just a matter of awareness. An NGO worker offered some suggestions:

"Even if I tell 50-100 people about this service in a day, it won't be an effective way to spread the message. This can't be done in a day. You have to give people some time to learn what Swara is. Workshops are a good way to solve this problem."

But the journalists were skeptical, suggesting that the problem with engagement went beyond awareness. Even though none of the respondents in this study attested to having felt any kind of persecutory pressure for having used CGNet Swara, one referred to the "shy nature" of the poor person:

"Villages in Chhattisgarh are the kind of places where everybody knows everybody else. You could easily be tracked and found out and there could be repercussions from having complained about someone or something."

A senior editor of a regional daily says,

"We cannot expect a weak defenseless person to have the courage to speak out on Swara. The service is a good beginning and it is my hunch that NGOs are the ones who are making the most use of it. Let it run for a while because it is still in its infancy, but it is true that if you are thinking about the tribals whom this should benefit then you have to remember that that individual firstly does not have the confidence to speak out. Secondly talking on the mobile phone to someone or something he does not know is a big thing."

6.1.2 Different affordances, new contexts

The voice interface is convenient and understood. One respondent put it bluntly: "we just dial and talk". Another regular says, "I can present issues very easily on Swara and can disseminate it easily too. I like the fact that I can present issues whenever I feel at my convenience." A third emphasized the phone's portability:

"you can listen or record on Swara from anywhere. You don't have to make time for it. I listen to it every morning when I walk to the lake to bathe. Once there, I sometimes also share stories that I find interesting with others on the lake by switching on the speaker phone."

The portability of the mobile phone led to the creation of novel spaces for interaction around CGNet Swara. Participants were able to act as broadcasters/infomediaries or journalists, generating and/or sharing content with others present. One regular contributor to the service dialed in from a moving train to record an interview with a group of fellow passengers when she learned about their wage payment grievances. Another contributor said that he first heard about CGNet Swara when his curiosity was aroused on seeing people listening to stories in the local train compartment during his daily commute. Others described switching on the phone's speaker to enable small groups of people to listen to stories at the same time. A contributor who once sent in a recording from a public meeting in a village said, "Most of the complaints were with regard to civic utilities so I just dialed the Swara number, put it on speaker phone, and made them listen to a few stories as a demonstration. We then recorded their own complaints on Swara."

In this framing, we emphasize the capacity of being able to speak, and to hear, rather than the symbolic or non-instrumental feelings associated with "being heard". We heard some comments to this effect − one respondent reported "feeling very nice after I heard myself on the Swara service." Others said they would take pride in being selected for the site, rallying friends and family to listen − but these responses were not as widespread as those about the simple practicality of the interface as a tool for on-the-fly citizen journalism.

6.2 Calling for grievance redressal

A common, but by no means exclusive, use of CGNet Swara was the pursuit of redressal of grievances: a complaint of an individual that was identified, mediated, described, and/or amplified by an activist/journalist, against an element of the local bureaucracy not doing what it should.

Pitbasu's case (see Section 4) is archetypal. Explaining the difficulties that he faced with government officials before resorting to CGNet Swara, the contributor who intervened on behalf of Pitbasu says,

"We were trying to get in touch with government officials and I sent a couple of my colleagues to meet the concerned officer. He did not listen. We approached them a second time, they did not listen even then. We met the commissioner and even he directed the officer to pay the wages, but the payment still did not happen. I felt that some action was needed. I was in Raipur at that time and a lot of pressure was needed. So I decided to pick up the phone and call in a last ditch attempt to see what would happen."

Contributors' responses reveal that CGNet Swara is perceived as a tool that took forward complaints and helped in their resolution. When we asked one contributor how she would explain CGNet Swara to someone who knew nothing about it, her response cut right to this role:

"I tell them it is a very nice medium where we can speak about any irregularities in government schemes. When you speak, then the government and the administration listen to you and they take steps to address the problem."

We heard similar framings offered by officials on the receiving end of the grievances. Even while expressing reservations about CGNet Swara being representative of "the people" (rather than activists), one administrator conceded the utility of systems such as CGNet Swara to ensure that entitlements due to people are disbursed. He suggested that a service could be most useful where corruption was rife, because it had the potential to usher in more transparency. Another administrator, a former NREGA official, suggested that if he still occupied the same post, he would consider CGNet Swara of immense help in tracking NREGA grievances.

Even more telling, perhaps, is the actual use of the CGNet Swara archives (via the website) by at least one NREGA staffer to track down grievances. This same staffer would prefer that people call the NREGA state helpline number directly (to reduce "bogus complaints") but nevertheless acknowledged the utility of the CGNet Swara resource.

Incidentally, the state's "official" NREGA helpline number is little known amongst Swara contributors, let alone the laborers they often represent. Contributors we spoke to in only one of four districts were aware of the hotline's existence. A caller to CGNet Swara also recorded a message asking people to make use of the helpline number in a bid to boost awareness about it.

Our analysis suggests a particular, almost symbiotic relationship between the three actors: the complainant, the citizen journalist, and the official. If the officials are using this system to find

grievances to address, and, indeed, *can successfully* address grievances, everyone benefits. An editor of a daily framed this relationship:

"You will see that in most cases the government acts like a giver, like a benefactor. So it is all about doling things out. That is the attitude of the government and Swara can succeed here, but as a citizen when you start talking about your rights, that is where the government comes across as weak. Resolving grievances is a different issue than talking about rights."

Another high-level official echoes this view,

"Suppose I come to know (through CGNet Swara) that this village has not received their entitlements, then I can intervene or the government can intervene and see that entitlements are being done. Suppose tomorrow they say that my village is very nice and I need an airport in this village then nothing will happen."

The resolution of discrete, actionable grievances encourages citizens, sustains journalists, and buttresses the credentials and structural power of the officials, while perhaps broader demands for more systematic and widespread reform remain unsatisfied.

6.3 Audiences and actors in the ecosystem

We asked callers and listeners "Who do you think is listening?". Some assumed a very direct process, with decision makers (such as the NGREA official) listening directly; others perceived linkages between the voice system and the Internet; still others emphasized the interactions between CGNet Swara contributors and traditional media. Indeed, each held a part of the puzzle.

One caller was firm in his belief that the chief minister of the state was a regular listener "because he looks at everything. So obviously, he will be listening to Swara too." Another contributor proclaims a similar confidence in CGNet Swara's audience, "Everybody. Farmers, 'the big people', the government administrators. Everybody listens to it." Another contributor says,

"With CGNet Swara whatever we speak directly goes on to the net and it reaches the concerned officials. We don't need to write any application or spend any money. We just have to give a missed call and we can communicate through that."

But others perceived that CGNet Swara had a role to play in translating or bringing "voices" out to the wider web. To some, CGNet Swara is simply a means to send their stories to the outside world. In the absence of computer and Internet infrastructure in the geographies inhabited by these contributors or the skills required to access them, CGNet Swara is seen as means to overcome these obstacles of accessing the Internet. One contributor addressed the cross-pollination concept directly:

"What happens these days is that the stories are also put on Facebook and a lot of people are reading it. Some people are taking legal action based on the stories, some people are calling up government officers after learning of incidents. So this is creating a pressure. CGNet Swara is spurring action on stories."

In other cases, contributors perceived that Swara was not simply a technical bridge to the Internet, but a conceptual and structural bridge to the people who *used* the Internet. This is due in no small part to the track record of CGNet, the discussion group. Most of the government administrators who were interviewed for this study spoke about knowing the founder of CGNet Swara through his work as a journalist and as a founder of the Internet forum.

Indeed, most external stakeholders of CGNet Swara, such as journalists and bureaucrats, point to the website, or emails, or the Facebook page, or the Twitter account, as a more convenient source of receiving content from the service instead of calling the CGNet Swara number. The occasional NREGA official aside, most decision makers were more likely exposed to translated, textual versions of the "voice" of individuals, which had already been mediated by a citizen journalist and edited/transcribed by Swara staff. Says a mainstream journalist,

"Checking CGNet Swara is not a regular part of my routine. I feel that if there is anything important, it will be emailed to me by the founders anyway."

But sometimes, CGNet Swara messages ARE important enough to merit attention from the mainstream media, and this attention represents another factor in the multidimensional interactions between individuals, contributors, moderators (Swara staff) and decision makers. The contributor who helped Pitbasu get his due wages using CGNet Swara says that the resulting media coverage of Pitbasu's case caused a huge boost in his morale, leading him to become a regular contributor to CGNet Swara on NREGA issues. Another contributor says that her belief in CGNet Swara as an effective medium for redressal stems from the fact that she was paid a visit by a journalist from a leading English daily to report on the village's NREGA status.

CGNet Swara's effectiveness in securing grievance redressals lies in large part to the efforts of its moderator in liaising with mainstream national news journalists and government officials who can amplify and act on stories reported on the system. Yet these efforts at liaising also form the crux of the system's complicated relationship with journalists. Journalists were critical of the persistence of CGNet Swara's founders in trying to get mainstream, national media coverage for grievances presented on the service. As one journalist questioned, "Is CGNet Swara for the people or for journalists?" The reluctance of the journalists to pay attention to content from CGNet Swara illustrates a difference in opinion between CGNet Swara staff and national editors about what is newsworthy. Says one journalist,

"CGNet Swara and I have the same kind of source network. Why should I be dependent on it as a source for my news? ... Also the content is well suited to local newspapers of this state than national newspapers ... The content on it is generally about NREGA and gram panchayat issues. There are too many of it on that. Tell me, do you think my readership which is urban English speaking is going to enjoy NREGA reports every day? ... My readers and my newspaper is going to tell me, that listen – you are in a state which is the epicenter of a very violent anti-state movement. Give us reports about that ... There is no NREGA problem peculiar to this region, it can be reported from anywhere."

Another journalist says,

"We are catering to an urban readership and our focus is naturally going to be on what affects their lives ... Tribals become far removed in such a scenario ... When I report, I am not reporting for the people in this state, I am reporting for people outside this state about this state."

An editor of a newspaper points to the capital-intensive nature of the news business to emphasize the profit-making needs of the industry. He says,

"If you are investing crores of money you obviously want profits for it and profits are not to be found in reporting on tribal issues. The ones who can't buy a newspaper and who don't buy the products advertised in them – why will any newspaper pay attention to them?"

While one journalist states that the content is news though its presentation style is not, another journalist says that it is "definitely information, but not news. There are too many complaints." Yet another journalist agrees that it could be a form of citizen journalism though it seems more like a "discussion forum, more like an exchange of ideas and a part of citizen journalism also because more and more people are coming up with own findings and report."

Compared to journalists, the bureaucrats and administrators have a different perspective of CGNet Swara. Referring to the limited audience of the service, one bureaucrat spoke about how unless CGNet Swara achieved critical mass amongst the people, he would not consider it a serious effort in representation of people. The same administrator also suggested that a service such as this would play a limited role in garnering an audience unless it scales up to be a part of a bigger system such as a community radio. Concerned with the antecedents of CGNet Swara's formation, and cognizant of the delicate political climate in the region, a senior bureaucrat of the state's police force expressed concern that the service may be being used by people *perceived* to be 'anti-state'. Touching on all these issues (scale, content, and perceived political slant), one official sums up his perspective:

"If it (CGNet Swara) has to be taken seriously, it has to come to some visible level and also take up various issues not limited to certain complaints or anti-government issues. Then people become irritated and they will say that nobody is saying a good thing and only highlighting a bad thing. Nobody will take it seriously if it just becomes a complaint box."

7. THEORETICAL DISCUSSION

Coupled with the usage statistics presented in Section 4, these three themes suggest that the addition of a voice portal to the CGNet system has both strengthened and transformed it, although not necessarily in the ways the founders would have expected.

Some of the tension appears around the nomenclature of citizen journalism [14] in particular. On the one hand, there are people gathering and submitting and selecting stories, acting in ways that closely resemble what journalists and editors do. On the other, the emergent practice of using the platform as a mechanism for grievance reporting suggests a use case which may be unique to this system and this context, rather than a common feature of citizen journalism platforms.

Yet too tight a focus on nomenclature and the definition of "citizen journalism" would detract from a set of broader learnings about the role of voice in participatory platforms which can be gained from the CGNet Swara case study. We frame five of these more generalizable issues as matters of theoretical emphasis, rather than binary assertions.

More participants, but a constrained conversation. While the introduction of the voice interface enabled more people to participate in a `conversation' on CGNet Swara, the structure of that conversation did not necessarily improve relative to the Internet forum. If anything, since threaded two-way conversations were harder over the phone, the resulting content may have been (a) more fragmented and (b) more sensitive to editorial shaping by the moderators than content on the website. Though it is beyond the scope of this analysis, we suggest that two fruitful paths for further examination would be to contrast text and voice based forum use in resource constrained settings in terms of (a) conversation/rhetorical analysis (turn taking, length of statements, references to prior posts, etc.) [21], and (b) the structure of the interactions between users, using elements of social network analysis including centrality, hierarchy, connectedness, etc. [40]

Text and voice, not text or voice. Although our focus has been on the users of the voice system, it is clear from the interviews that the system is a multiplatform endeavor; the whole remains, perhaps more now than ever, greater than the sum of its parts. That voice messages were transcribed, translated, and made available on the website was a critical part of its power to influence officials both directly (as readers) and indirectly via journalists. We would thus suggest that in some cases, voice might be a necessary but not sufficient affordance for the deployment of a participatory system in low-literacy resource constrained settings. Theoretical frames which account for mixed, hybrid or complementary media may be more useful than those which stress successive waves of media/technologies. It is worth noting that in CGNet Swara, the transferability generally flows in one direction, from voice to text.

More resource than replacement. Even with the addition of voice, the evolving practices of use around the CGNet system retain linkages to the mainstream media. One of the ways in which "impact" occurs is when journalists pick up stories and amplify them on other channels. The convertibility of messages, from voice to text (English) also assists CGNet Swara as a source and aggregator, rather than competitor to the mainstream press.

More structure, less self-organization. The general affordances of IVR and the particular choices made by the system's builders (the prompts and pathways) created a communications platform experience with a relatively constrained set of possible kinds of interactions. Even if the computer (server) is hidden to users, the system's success has depended practically on the strength and perhaps simplicity of its architecture and design. CGNet Swara is a computing intervention [12], not simply the provisioning of "access".

More -mediaries than peers. Finally, as is the case with many ICT4D initiatives, we risk paying too much attention to the technology and not enough to the organizations and people which make use of the technology. In this case, the tremendous capability, commitment, and connections of the founder-moderator were absolutely critical: for setting a receptive scene for Swara in the community, for conducting training workshops and media interviews, and for the day-to-day role of selecting content, screening posts, translating audio to text, and championing the posts with journalists and government officials to effect further publicity and follow-up action. So, too, would the system have made little headway without the citizen journalists willing to use it, and the mainstream journalists willing to cite it. To switch to current ICT4D parlance, there are at least two layers of intervention [35] between the individual (with the grievance) and the official who can fix it; there is the citizen journalist (an infomediary who works with information and technology on behalf of someone else), and the CGNet Swara staff, which acts as a moderator/gatekeeper, selecting some stories for inclusion on the website and portal.

We think that these five points have value in the conversations about how voice is integrated into a variety of current areas of exploration around mediated social change. These threads, which sometimes overlap, include *citizen journalism*, mentioned throughout this paper, which is reacting (and celebrating) the role of the mobile phone as first-line witness in everything from tsunamis [17] to revolutions [8]; *community informatics* [18] which, having been exploring the challenges of technology, inclusion, participation, and social change for over a decade is

now embracing and innovating around the mobile phone [5,28]; and *e-governance/transparency*, which has seen the mobile emerge as a way to increase the richness and range of the interactions between states and citizens [2,34].

Each thread, at times, seeks to alter the "top down" status quo, bringing more actors into complex social, political, and economic decision processes. Each is a close cousin to ICT4D, and increasingly their approaches, stressing inclusion and participation, are merging into a redefinition of how to approach ICTs in the development process [20]. Our integrative themes, then, might be to move up a level from each of the threads, addressing instead their common concerns with participation as linked to issues of power [6] and/or influence in a public sphere [19].

At this level, the contributions of CGNet Swara are mixed. It is evident in our case study that the simple inclusion of voice affordances helped increase the reach and richness of an ongoing effort to reconfigure the public sphere in Chhattisgarh. Grievances were made salient, and acted on. To summarize the five issues, other ICTD4D projects can learn from how a carefully structured voice plus text system, staffed by passionate and skilled people, working with existing actors in the conventional media, was more inclusive than the system that came before it, and has brought about more impact for its users and constituencies.

And yet it was less certain that anything more fundamental has (yet) changed because of either the practical inclusion of voice functionality or the symbolic power of "Voice". Partly this may be because of all the interdependencies between the new voice system and the existing stakeholders. Whether the "Voices" were "Heard" differently by "the Powerful" is perhaps a broader topic for another paper – but we'd suggest [31,39] as starting point for the difficulties of untangling the symbolic and the mundane.

Nor can a case study assess whether this same approach would work in other settings; would a more literate, technically savvy, Internet-connected population also elect to work with a voice platform? If not, the particular instance and promise of voice as a means to increase a participatory project's inclusiveness may be restricted to low-literacy/resource constrained settings.

8. CONCLUSION

This case study has described a participatory "citizen journalism" system established for a place and a people that were previously locked out of the mainstream news media. The system's users, often but not always acting as citizen journalists, share information with each other and with the broader community of economic and political actors in their state. Officials "pay attention" to the issues amplified by the system, and occasionally take action. It's complicated, and perhaps not quite what its founders had intended. That the system works (at all), in an environment as remote and challenging as Chhattisgarh, makes it a worthy case study for ICT4D. And it's "working" because of voice.

We describe the emerging practices around CGNet Swara against the background of an explosion of new related practical and theoretical work in ICT4D, participatory development, community informatics, and citizen journalism. Despite a crowded space, this paper makes a contribution to ICT4D theory and practice by explicating how voice functionality can alter and enhance interactions between users, champions, traditional media and, most importantly from the perspective of grievance redressal, institutional actors in the manifestation of "impact" and the re-negotiation of power.

To the extent that CGNet Swara opened up new avenues to participation (mixing the inclusiveness of the phone/voice with the preexisting interactivity of Web 2.0) in a digital public sphere, and to the extent that this participation has led to different and better outcomes, CGNet Swara has already had impact worthy of discussion and replication in ICT4D circles.

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