

ICT-Enabled Grievance Redressal in Central India: A Comparative Analysis

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ABSTRACT

Helping citizens to resolve grievances is an important part of many e-governance initiatives. In this paper, we examine two contemporary initiatives that use ICTs to help citizens resolve grievances in central India. One system is a state-run call center (the CM Helpline), while the other is an independent citizen journalism service (CGNet Swara). Despite similarities in their high-level goals, approach, and geographies served, the systems have key differences in their use of technology, their level of transparency, and their relationship to government. Using qualitative interviews, field immersions, and other data, we analyze how these differences impact the experiences of citizens, officials, and the intermediaries between them. We synthesize our observations into a set of recommendations for the design of future ICT-enabled grievance redressal systems.

Categories and Subject Descriptors

K.4.0 [Computers and Society]: General

Keywords

E-governance; Grievance redressal; IVR; CGNet Swara; India

1. INTRODUCTION

Information and communication technologies (ICTs) are often hoped to bring greater efficiency, transparency, and accountability in governance. Prior researchers have examined diverse e-governance applications, spanning telecenters [10,18], web portals [17,19], call centers [14], and interactive voice response (IVR) systems [6,8,15,23]. While there are examples where ICTs have offered benefits for governance [1,17], researchers often observe that technology alone does not substitute for strong institutions, sound policies, or engaged citizenry [1,5,11,14,18,25,26].

In this paper, we leverage a unique opportunity to compare two e-governance initiatives that were coincidentally implemented in a similar geography, at a similar time, and with similar goals. Both initiatives seek to use ICTs to improve the redressal of grievances in central India. In states such as Madhya Pradesh, 82% of the population is rural and 32% percent lives below the poverty line [20]. A state monopoly on services such as electricity and water [17], coupled with unreliable operations and frequent

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		CM Helpline	CGNet Swara
Similarities	Goal	Solve citizen problems with public service delivery	
	Approach	Receive complaints over phone, outreach to officials	
	Geography	Madhya Pradesh	Central India, esp. Madhya Pradesh and Chhattisgarh
Differences	Relation to government	Inside government	Outside government
	Technology used	Live operators	IVR system (with later review by moderators)
	Transparency of reports	Closed	Open (once approved)

Table 1: Background on grievance redressal systems.

corruption, mean that citizens often have urgent complaints that go unresolved. Both initiatives seek to address this problem by inviting citizens to use mobile phones to report their complaints, after which there is outreach to government officials for resolution.

Despite their similarities, the services have key differences in their approach: one is a state-run call center (the CM Helpline), while the other is an independent citizen journalism service (called CGNet Swara). In the CM Helpline, phone operators record the complaints of callers. The operators work from inside the government to route the complaint to the appropriate official. Complaints automatically escalate until they are deemed to be resolved; however, they are never released publicly for others to see. In contrast, CGNet Swara asks callers to record grievances using an IVR system. Following review by a team of moderators, the recordings are publicly released on a website as well as the IVR system. A distributed team of activists and volunteers approaches government officials to help resolve the published cases. A summary of these similarities and differences appears in Table 1.

To understand how these differences impact the everyday experience of each service, we conducted a parallel study of both systems. Our mixed-methods data collection encompasses 84 semi-structured interviews as well as field observations, focus groups, informal conversations, and analysis of grievance reports. Our analysis focuses on a critical comparison of the systems, spanning the process of raising, reviewing, responding to, and resolving grievances. This represents the first study (to our knowledge) of the CM Helpline, a large-scale, well-intentioned initiative that we believe merits attention from researchers and practitioners alike. It also extends prior work on CGNet Swara [12,15] with a deeper focus on grievance redressal.

Our findings illustrate the nuanced ways that the choices of technology, transparency of data, and relationship to the government can impact the perception and use of e-governance services. For example, by using a live operator, the CM Helpline enables a large number of individuals to easily participate in

grievance reporting; however, by using an IVR system to record and re-broadcast stories, CGNet Swara enables entire communities to participate in the process of reporting and resolution. While the transparent publication of complaints is found to provide both leverage and satisfaction for callers to CGNet Swara, transparency of data does not imply transparency of workflow, which is arguably stronger in the CM Helpline. Finally, the relationship to the government tempers the real and perceived accountability of both platforms, with advantages and disadvantages in both cases.

We close with a set of recommendations, both for improving each of the systems and for envisioning how they should fit together. With respect to technical workflow and data transparency, we believe that there are a common set of best practices that could be embraced by both systems. However, when it comes to the relationship with the government, there is value in having two separate platforms. As an inside system, the CM Helpline provides swift resolution of relatively simple cases, but CGNet Swara serves as an important watchdog for shedding light on large or neglected problems where internal channels have failed. We hope that this comparative analysis of two contemporary e-governance services can help to map out the design space underlying these and similar platforms, enabling researchers and practitioners to make thoughtful decisions in designing future systems.

2. RELATED WORK

2.1 Citizen-centric e-governance

E-governance literature spans an expansive range of topics, but here we focus on citizen-centric e-governance, specifically on applications that are designed to enhance access to information and service delivery for citizens.

E-governance research [9] and policy (e.g., India's e-governance policies) have both called for citizen-centric e-services initiatives that aim to improve transparency, participation and accountability in governance. However, Bhatnagar [2] and Narayanan [17], among others, find that most literature focuses on improvements in efficiency and effectiveness of government via e-governance, with only an ancillary focus on the abovementioned goals. While e-governance projects have the potential to create more transparent and less corrupt governments, Schwittay [22] writes that this potential remains unfulfilled because corruption is a political problem not amenable to technological solutions and e-governance projects deemphasize the political element of governance, replacing it with administrative procedures instead. While Bertot et al. [1] describe e-governance and social media tools that have had demonstrated impact in increasing transparency and reducing corruption, they also stress the importance of government officials using the system appropriately and without evasion. Veeraraghavan [26] conducted an in-depth ethnographic study of a digital network built to check corruption at lower levels of the bureaucracy in reporting daily outcomes of a rural employment scheme, and reports that though it has significant potential, lower-level officials found ways to subvert its measures of surveillance and control, concluding that such projects are as much political as technical.

Literature on accountability in governance [17,21] says that answerability and enforcement are necessary and sufficient conditions for accountability. Answerability is the ability of citizens to demand information and justification from government officials, whereas enforcement is the ability of citizens to impose sanctions on officials in case of misconduct. Transparency ensures that information is easily available, and participation requires that citizens can demand justification and impose sanctions on errant officials. Thus transparency and participation are both crucial to

ensuring accountability. Matheus et al. [13] note that the notion of transparency is often limited to making data publicly available. The scale of the data means that it is easy to get lost in the maze. Thus, complete transparency entails also releasing some kind of interpretation or summarization of the data.

2.2 ICT-enabled grievance redressal

This is not the first paper to study ICT-enabled grievance redressal systems. Past work has considered varied approaches using telecenters, web portals, call centers and IVR systems.

Srinivasan et al. [24] and Chakraborty and Seth [6] design IVR tools to enable citizen feedback on the implementation of social welfare schemes. Mudliar et al. [15] examine the initial usage of CGNet Swara and highlight grievance redressal as an unexpected emergent category of activity. Mudliar and Donner [16] explore the potential of CGNet Swara and IVR systems in general to facilitate citizen participation. Marathe et al. [12] conduct a mixed-methods analysis of CGNet Swara, uncovering, in addition to the most visible impact of the resolution of grievances, a diverse range of impacts associated with listening and contributing to the platform. In this paper, we draw from the same set of interviews and field visits as Marathe et al. [12] to inform our analysis of CGNet Swara.

Mohan et al. [14] study two e-governance projects in Karnataka, India: Helpline enables citizens to register and track complaints via internet, phone, email and paper, and Aasthi computerizes property tax assessment and collection mechanisms. They find that e-governance does not always enhance efficiency and accountability. Vasudevan [25] studies STAR, an e-government project in Tamil Nadu that used ICTs in property-related administrative processes. The study concludes that the impact of e-government projects is decided by key policy decisions and not just the technology used. Rajalekshmi [18] studies the role of the intermediary in a telecenter project in Kerala, concluding that institutional membership of intermediaries is crucial for effective service delivery.

Madon [11] documents the impact of three e-governance projects in Gujarat, Kerala and Karnataka from the point of view of the communities they serve, concluding that better technology does not automatically lead to better governance and ultimately better development. Bussell [5], based on data from sixteen Indian states, concludes that whether citizens benefit from technology-enabled service centers depends on the political characteristics and the level of corruption in the state. Bhatnagar and Singh [3,4] develop a framework for impact assessment of e-governance projects and propose that process reform should be given greater attention in the design of e-government projects. Narayanan [17] examines two online public grievance redressal mechanisms in order to answer the questions of whether accountability can be mainstreamed in e-governance initiatives; and whether citizens can use e-governance initiatives to hold government officials accountable. Narayanan concludes that e-governance helps achieve answerability, though not enforcement; and recommends strengthening horizontal accountability, increasing transparency, and structuring e-governance initiatives within larger management reforms. Ray [19] analyzes an online grievance redressal initiative in Madhya Pradesh and finds that ICT enables accountability via ease of use, provision of multiple access points, and sustained top-level involvement.

In this paper we leverage a rare opportunity to study side-by-side two systems that were coincidentally implemented in a similar geography at a similar time, with the aim to provide ICT-enabled grievance redressal in central India. This enables us to study how the design decisions that underlie a grievance redressal system impact its ability to fulfill its goals.

3. CM HELPLINE

The CM Helpline, a good governance initiative of the current Chief Minister (CM) of Madhya Pradesh (MP), is envisioned as a bridge connecting citizens to the state. Officially inaugurated on July 31st 2014, the CM Helpline is a public-private partnership between the State Agency for Public Services of the state government of MP and a private business process outsourcing (BPO) services firm.

3.1 Methods

We conducted 14 semi-structured interviews, 5 informal conversations with CM Helpline officials, and direct observation during a 6-day field visit. The CM Helpline is a newly-launched initiative and we were the first researchers to approach the administrators. While the process involved some hurdles with documentation, overall the field immersion was very fruitful.

The CM Helpline permitted us to use the data of 40 phone calls (spanning 44 complaints) that we observed during our field visit. We conducted in-depth semi-structured interviews with 4 helpline staff (3 operators, one supervisor), two officials, and 8 complainants who answered our phone calls (of the 44 we tried calling), in addition to several informal conversations with senior bureaucrats and helpline officials and staff.

We also downloaded the data for 17,490 pseudo-randomly-chosen complaints from the CM Helpline's web portal, after which their server stopped responding to automated requests. Given a specific complaint number, their portal returns (in Hindi) its date of registration; the name, address, and phone number of the complainant; a description of the problem; the category and department that the complaint is assigned to; the current status (open/closed) of the complaint; and a log of government officials' responses and changes in complaint status over time.

3.2 Workflow

Raising

The CM Helpline runs a toll-free telephone line reachable from 7am-11pm every day. Callers are greeted by an IVR service and presented with three choices: press 1 for information, press 2 for complaints and press 3 for demands or suggestions. On choosing an option, callers are connected to a live operator, one of 300 people working in two shifts at a call centre. Operators use a helpline-wide customer relationship management (CRM) software system to assist them in handling calls.

Line 1, the information line, provides information about eligibility and application requirements for any of over 420 schemes administered by the MP state government (e.g., the Ladli Lakshmi scheme provides financial incentives for the education of girl children), in addition to servicing queries about complaint status.

Line 2 is meant for the registration of complaints about anything under the purview of the state government, including denial of access to any of the state-run schemes. Every complaint is required to contain the caller's name, mobile phone number and complete address; the department (e.g., Municipal Corporation) and block, ward or sub-department responsible for this complaint; the type of complaint (e.g., illegal construction); and a description of the problem. Once the operator registers a complaint, the CRM system assigns it a complaint number. The caller also receives an SMS containing the complaint number and the expected date of resolution. Callers can use this complaint number to check the status of their complaint via the phone line or the website.

Line 3 registers *suggestions*, i.e., requests for improvement in existing services, such as better roads; and *demands*, i.e., requests for new services or utilities, such as a new road. Every suggestion

or demand is required to contain the caller's name, mobile phone number, and complete address; the department and block/ward/sub-department responsible for this request; the type of request; and a description of the request. The CM Helpline does not offer callers a mechanism to track the status of their suggestion or demand.

Reviewing

Operators probe callers on several levels before raising a complaint. First, they help redirect callers to the correct line, e.g., if a caller requesting information about a government scheme is found to have chosen the complaints line, they are asked to disconnect, call again, and choose option 1 instead. Second, if the caller has previously called the CM Helpline from the same phone number, the CRM automatically populates the caller's name and phone number, prompting operators to check whether a caller has an as-yet-unresolved complaint about the same issue. Third, the CM Helpline is meant to be used for resolving problems encountered during service delivery and not as an alternative to the government's existing service delivery channels. Hence, operators try to filter cases where callers have not tried applying through service delivery channels before filing a complaint. For example, if a caller says they are unable to obtain a caste certificate, the operator asks whether they were unfairly refused one (in which case, it is truly a complaint), or they haven't tried applying at all. Finally, service delivery often takes time. Thus, even complaints which are otherwise legitimate are only registered if the problem has persisted for a *sufficiently* long time. Says operator CS2, "*For example if there's no light [electricity], they'll call to complain. We ask them how long it's been gone for, and they say half an hour ago. We don't take such kinds of complaints. We tell them please wait for a day or two.*"

Responding

The CM Helpline views every government department as a hierarchy of four levels of officials, from the junior-most, often block-level, official at level one (L1) to the department head at level four (L4). This extensive *mapping* of officials into levels remains a work in progress because of periodic (routine) transfers of officials across postings and departments. As of January 2015, the CM Helpline's system maps over 9000 officials across 56 departments.

Thus by choosing the department and the ward/block/sub-department while raising a complaint, the operator essentially selects an L1 official. Once registered, the L1 official receives an SMS containing the complaint number and the name and phone number of the complainant, with a period of seven days to respond to the complaint. To learn more about a complaint or to respond to it, officials can access the CM Helpline's CRM system in two ways: by logging in to a web portal with their user id and password, or by calling up a special toll-free line (served by a subset of operators) called the Officer Helpline. Upon logging in, the web portal displays the list of complaints that are assigned to that official, and for L3 and L4 officials, an additional list of all complaints assigned to their department, with the option to view or respond to each complaint. On the phone line, officials can give their name, designation and a complaint number to operators to ask for details or to respond to a complaint.

All newly registered complaints are in the *Open* state. When responding, officials must enter a response in English or Hindi and choose a new status for the complaint from among *Work in Progress* (action has been taken but it will take time to resolve the issue), *Accepted-Partially Closed* (the official accepts the complaint and has taken action to resolve it), *Rejected-Partially Closed* (the official does not accept the complaint), *Out of Department* (the complaint is unrelated to the official's

department), or, in the case of L3 and L4 officials, *Force Closed* (no further action will be taken on the complaint). Out of Department complaints are manually inspected by CM Helpline support staff and reassigned to an L1 official of the correct department, who then has another seven days to respond.

Complaints that do not receive a response or resolution in seven days are escalated to the official at the next higher level. For instance, a complaint that remained unresolved at level one would be escalated to the L2 official, who would then have seven more days to respond and so on till level four, the highest level.

The CM Helpline sends registered suggestions and demands to nodal officers (government-appointed liaisons) of concerned departments on a weekly basis. There is no further tracking, and it is up to the nodal officers to respond to callers as needed.

Resolving

For every complaint that is marked *Partially Closed*, a CM Helpline operator from the Customer Outbound team places a call to the complainant's registered phone number. If the complainant does not answer the operator's call, or if their phone is unreachable, the CM Helpline tries calling them at least three more times; if that fails, the complaint status is changed to *Closed-Complainant Unreachable*. Such complaints are considered successfully resolved. If the complainant answers the call, the operator informs them of the official's response and asks whether they are satisfied with the action taken. If the complainant is satisfied, the operator changes the status of the complaint to *Closed-Complainant Satisfied*. Such complaints are considered successfully resolved. If the complainant is not satisfied, the operator resets the complaint status to *Open* and enters the complainant's response into the CRM system. Such complaints are automatically escalated to the next higher official, and considered unresolved.

Senior officials at levels 3 and 4 have the power to *force close* escalated complaints, intended to allow officials to dispose of faulty complaints, especially in instances where complainants don't indicate satisfaction even if officials resolve the problem. Force closed complaints are considered permanently closed and no calls to ask for satisfaction (or lack thereof) are made to complainants.

3.3 Example

To clarify the CM Helpline workflow, we describe a grievance that was recently reported and resolved. Hand pumps are a major, and often the only, source of potable water in rural India. The Public Health and Engineering (PHE) department of the state government is responsible for the installation and repair of hand pumps.

On January 16th, Salim (name changed) called the CM Helpline and, in conversation with an operator, registered a complaint saying that the hand pump in a primary school in his village was broken for the last 15 days. The operator assigned it to the level one (L1) official of the Public Health and Engineering (PHE) department in Guna, Madhya Pradesh.

On January 19th, the L1 official called the Officer Helpline to inform them that the hand pump had been fixed. On January 22nd, an operator called Salim, verified that he was satisfied with the L1 official's resolution, and set the status of the complaint to *Closed*.

3.4 Usage Trends

According to officials, the CM Helpline receives an average of 45,000 calls per day, with an average call duration of just under four minutes. Of the incoming calls, 79% choose the information line, 20% choose complaints, and 1% suggestions and demands. From its inauguration on July 31, 2014 until March 1, 2016, the CM Helpline received a total of 1,761,992 complaints. According to

officials, 62% of these were closed with the satisfaction of the complainant, 20% were force closed, and the rest are in progress.

We were naturally curious about these high numbers, so we cross-checked them across multiple sources. They were consistently reported in all of our interviews and informal conversations, including an internal presentation created by CM Helpline officials. We cannot independently verify the reported number of calls, but helpline operators reported a target of 100 to 120 phone calls per day, and their supervisor and officials reported an average of 150 phone calls per operator per day. Given a team strength of 300, the CM Helpline's stated average of 45,000 calls per day might be a slight exaggeration based on peak usage, but it is likely not too far from reality. The total number of complaints, on the other hand, is easily verified: the CM Helpline's CRM system assigns complaint numbers incrementally starting from 30,001. The total number of complaints is thus the highest complaint number that returns a valid result on the CM Helpline's web portal minus 30,000.

Geographically, of the 17,490 complaints downloaded from the CM Helpline web portal, the district of Indore (10.4%) reported the highest number of complaints, followed by Rewa (7.2%), Bhopal (7.1%), and Satna (5.3%). While Indore and Bhopal (the capital of MP) are cities, Rewa and Satna are among India's most backward districts. In terms of departments, the Municipal Corporation (16.4%) received most complaints, followed by the Revenue (16.3%), Panchayat and Rural Development (12.2%), and Energy (9.1%) departments. In terms of complaint type, 29.4% of all complaints were categorized as 'other', while 3.4% related to cleanliness, sewage, and waste disposal; 3.3% complained about a lack of electricity; and 2.8% related to the demarcation or illegal possession of land.

4. CGNET SWARA

CGNet Swara is a voice portal for citizen journalism in rural central India. This initiative began in 2010 with the goal of encouraging participation by rural, tribal communities. The system and its impact has been described in detail elsewhere [12,15], and we focus here on its role as a platform for grievance redressal.

4.1 Methods

We draw from a set of 70 semi-structured interviews (in person and by phone), two focus groups of a total of 15 people, direct observation during a 9-day field visit, and analysis of 337 impact posts, which informed prior work on CGNet Swara [12]. Respondents represent a wide cross-section of the CGNet Swara ecosystem, including contributors with resolved and unresolved grievances, active listeners, recent drop outs, mainstream journalists, and government officials. To analyze impact posts, we inspected each post to note its location and see how many people (if any) were explicitly reported as being affected by the grievance.

4.2 Workflow

Raising

CGNet Swara runs an IVR service and a website. Callers give a missed call [7] to CGNet Swara's phone line, and the IVR server calls them back. Users who answer the call are presented with three choices: press 1 to record a post, press 2 to listen to the latest posts, and press 3 to listen to the latest *impact posts*, ones that led to verified benefit for the contributor's community. If the user chooses the second or third option, the IVR system plays back the four latest posts or impact posts respectively. Users who press 1 are prompted to record a voice message up to 3 minutes long. Every post is expected to contain the name and address of the contributor, and in case the contributor is an intermediary, those of the affected

person(s). Grievance posts must also narrate the complaint and end with a call to action specifying the concerned government official's designation and phone number. CGNet, as an advocacy platform, prioritizes grievances affecting multiple people and does not accept personal problems that are not widely applicable. Contributors are also expected to have tried applying to governmental service delivery and grievance resolution channels before posting.

Reviewing

CGNet Swara's IVR server forwards every recorded post to its editorial mailing list, which consists of its founder, one editor, and eight moderators. Multiple moderators review each incoming post to check whether it meets the criteria for a publishable post, using the post's email thread to discuss and track its status. Grievance posts are also fact-checked for accuracy in conjunction with field contacts from nearby regions. If moderators feel that a post, though suitable in content, is lacking details or needs better structuring, they call the contributor to explain the problem, and request them to re-record by calling the IVR system. Moderators make reminder calls once a day for up to five days or until the contributor re-records, whichever is sooner. Posts that are approved by moderators are reviewed by the editor, who selects the posts that should be prepared for release. Moderators then summarize such posts in textual form and edit the audio files to reduce noise and remove blank sequences. The editor uploads the summary and the audio to the server and marks the post as ready for release. Every few hours, the founder puts any finishing touches on such posts, and publishes them. Published posts are available to access via the IVR service as well as the website (<http://cgnetswara.org/>).

Responding

The publication of a grievance sets into motion CGNet Swara's follow-up process, which aims to resolve the grievance. At the core of this process are CGNet's follow-up team, five people whose main responsibility is following up on all published grievances, and *field champions*, i.e., individuals trained by CGNet during their outreach activities who serve as local proponents or field contacts. Once a grievance is published, a team member calls the contributor to ask about their story. The follow-up team gets involved only once they verify the grievance and ensure that the contributor has indeed tried all traditional channels of resolution. The team makes phone calls, emails, and in many cases, visits officials in person, advocating for the contributor's case. Field champions play an important role by conducting in-person follow-ups in their areas. In addition to dedicated follow-up personnel, CGNet Swara also encourages listeners and web visitors to respond to the contributor's call to action by making a phone call to the official, drawing their attention to the issue, and asking for a resolution.

Resolving

CGNet Swara encourages contributors whose grievances have been redressed to call back and record an impact post explaining the problem they faced and its resolution. These posts not only raise awareness among listeners and web visitors about the effectiveness of the service, but are in fact the only way for CGNet to truly know whether a grievance was successfully resolved. By default, all published grievance posts are considered unresolved, until a corresponding impact post is recorded.

4.3 Example

As with CM Helpline, we present a grievance that was recently reported and resolved using CGNet Swara. On March 17th, someone named Jagdish called CGNet's phone line and recorded a message saying that the only hand pump in a tribal forest village of 300 people had been broken for a year. They had tried complaining

to the PHE department several times, but they were told that it was the forest department's job and that there were no funds available for the repair. CGNet Swara's moderation team reviewed the message to ensure that it met their criteria, and then transcribed and summarized it for publication. The message was ready to publish on March 18th. While CGNet's founder usually publishes messages a few hours after the moderation team finishes preparing them for publication, Jagdish's message was published on March 29th. While the moderation team reports that such slippages are rare, they can occur because messages are manually tracked.

Once the post was published, CGNet's follow-up team and listeners made phone calls to the concerned officials appealing for help. On April 5th, someone named Ramashankar recorded a message thanking CGNet Swara and its listeners because the hand pump that Jagdish had complained about had been repaired and was now fully functional. The moderation team reviewed this message and published it as an impact post.

4.4 Usage Trends

CGNet Swara is currently smaller in scale than the CM Helpline. However, with commensurate investment of resources, there is nothing that would prevent its model from scaling to a similar size.

As of March 2016, CGNet Swara receives about 1,000 phone calls per day. Most callers only listen to reports. Over the last year, there have been an average of 6 reports published per day and 11 impact reports per month. The majority of published reports are grievances. Since its inception in 2010, there have been a total of 8,832 published reports and 400 impact reports. Thus only a small fraction (about 5%) of the total reports result in a verified resolution; however, not every report is a grievance [12] and the voluntary reports of resolution are not necessarily complete.

Grievances reported on CGNet Swara often affect a large number of people. In the 95 impact posts that reported the number of people directly benefitted, the average number was 61, with a median of 25 and a maximum of 850. Geographically, impact posts originate primarily from the states of Madhya Pradesh (41%), Chhattisgarh (27%) and Odisha (15%). The district of Rewa (21% overall) in MP reported the highest number of impact stories, followed by Kabirdham (10%) in Chhattisgarh, both of which are among India's most backward districts. CGNet Swara has published impact stories originating from thirteen districts in MP. The most common types of grievances relate to unpaid wages, mid-day meals in schools, roads, hand pumps, rations, land and forests [12].

5. CRITICAL COMPARISON

The most obvious difference between the two systems is in their scale: going purely by the numbers, the CM Helpline seems to trump the impact of CGNet Swara. Though CGNet Swara has been operating for a longer period of time, the CM Helpline has at least 10 times more staff, has taken on about 200 times more grievances, and its success rate in resolving grievances is 10-15 times higher. That said, when it comes to the impact of each grievance resolved, CGNet Swara may have the edge. The example grievance resolved by the CM Helpline in section 3.3, for instance, refers to a hand pump that wasn't working for fifteen days, whereas the CGNet Swara example in section 4.3 refers to *the only* hand pump in a tribal forest village of three hundred people that wasn't working for *over a year*. These examples are typical of the grievances received by the two systems. Indeed, as reported in section 4.4, every impact post on CGNet Swara benefits 61 people on average, out of our sample of 95 impact posts that explicitly mention a number.

Grievances on both systems commonly focus on problems related to hand pumps, land rights, and electricity. But whereas CGNet Swara has an explicit focus on rural and tribal concerns, the CM Helpline also receives a large number of complaints related to urban concerns such as sewage and waste disposal. Thus while the CM Helpline is known across Madhya Pradesh, CGNet Swara is only known in thirteen districts. Other than the difference in focus, the systems are geographically largely similar, both reporting a hotspot in the district of Rewa.

In this section, we compare how differences in the design of these two systems impact the daily experiences of citizens, officials, and the intermediaries between them.

5.1 Raising

One of the primary differences between CGNet Swara and the CM Helpline is the use of an IVR system versus a live operator for raising complaints. This difference leads to various strengths and weaknesses for both systems.

One advantage of a live operator is the ability to interactively clarify the complaint on hand. Here is an excerpt of a CM Helpline call (operator O, caller C):

O: *Namaskar. Welcome to the CM Helpline. Today you are talking to [name]. How may I help you?*
C: *There is no water here...*
O: *Do you have a hand pump?*
C: *No, the water comes by tankers. But the tankers are not able to reach, please help us!*
O: *Why are they not able to reach?*
C: *Arrey what should I tell you! They have blocked access to the road that leads to our houses! It's not just me, [name], [name], [name] are also affected, we are very troubled.*
O: *Who has blocked the road?*
C: *Yes, [name] is building a house behind [name] hotel and he's made a balcony blocking the entire road. There's no water here...*
O: *Oh I see, it is an illegal construction.*
C: *Yes, please help us.*
[...]
O: *Your complaint has been registered. Your complaint number is [number]. Your complaint will be resolved in seven days.*

This excerpt illustrates the work done by the operator and caller that goes in to disambiguating requests and working up the correct complaint: it is only after three rounds of probing that the real concern—illegal construction—is arrived at. *“There are ambiguities that need to be resolved while noting down complaints,”* says operator CS3, *“callers tell us that they haven't received their payment. But which payment? It could be their salary, their pension, etc.”* Operators also dialogue with the caller to select the department and sub-department responsible for the complaint, the type of complaint, and write down a description of the problem. Further, many government departments require complaints directed to them to contain important pieces of information, e.g., pension account number, which are often unique to each department. Operators receive initial and periodic training to help them choose the correct department and learn each department's custom requirements, freeing callers of the responsibility of knowing what is required.

CGNet Swara, on the other hand, requires callers to compose and record a time-limited message containing all the required pieces of information via an automated IVR system. While regular contributors find the technology easy to use, new callers *“need training to be able to use the service on their own,”* says contributor

GG8. Any missing information is only discovered in the next phase of the workflow, leading to a more time-consuming process. Lastly, even seasoned contributors reported feeling that on occasion the time limitation meant that they could not address serious issues in depth, making one such, GIC5, wonder, *“will those listening get the full import of the issue?”*

Once a contributor has finished recording their message, CGNet Swara's IVR system plays a voice prompt confirming that the message has been recorded before ending the call. The CM Helpline, on the other hand, goes a step further and sends callers an automated SMS containing the complaint number, confirming that the complaint has been registered, and assuring callers of resolution within seven days. Additionally, operators reinforce this message before ending the call. Two CM Helpline callers reported that this SMS and verbal reinforcement made them feel like the helpline had already taken an important first step towards resolution.

Though live operators are helpful for callers, supporting them imposes limitations on availability, team size and operating hours. Callers to the CM Helpline, with its team of 300 operators, are often faced with long hold times. *“It is like the waiting lines at ration shops,”* quips operator CS3. However, though the helpline is fully-staffed and available from 7am to 11pm every day, all of the operators we interviewed said that they receive very few calls before 9am and after 9pm. This results in a situation where callers often have to wait for a long time, while at other times operators are idle for several hours. CGNet Swara's IVR system operates 24x7, and in fact, routinely receives calls and posts at night, with no hold time for callers. However, its offline nature means that CGNet staff cannot synchronously clarify the complaint with the contributor and must separately track the contributor down to do so. Thus in CGNet the onus is on the contributor to record an appropriate message. While IVR may offer improved availability for callers, when a live operator is available the interaction is easier in many ways.

Relying on live operators also puts a limitation of the number of languages that the system can handle: the CM Helpline requires callers to speak Hindi, and those who cannot are asked to find someone who can and call back. In addition to reaching out to tribal populations, CGNet Swara services a larger area and hence cannot afford to neglect non-mainstream languages. The IVR system's recording functionality is language agnostic, allowing CGNet to remain flexible in terms of languages at this stage of its workflow.

While having their message recorded (and later broadcast) in their own voice on CGNet Swara means a lot to regular contributors [12], some callers report feeling nervous because they don't know how they will sound. Interestingly, however, when it comes to controversial or sensitive issues that people are afraid to discuss in public, callers find it easier to talk *“with a line [system] on the phone,”* as opposed to another person, says contributor GIC5.

5.2 Reviewing

An interplay between three factors—live operator versus IVR, government-run versus citizen-run and private versus public grievances—seems to influence the strategy each service takes in reviewing complaints.

The CM Helpline does not have an explicit review process. However, in figuring out the nature of a call in conversation with callers, operators conduct the equivalent of a high-level review, minimizing incomplete, premature and duplicate complaints, and weeding out genuine complaints from non-genuine ones (e.g., based on how long a problem has persisted). Lacking such

synchronous interaction, CGNet Swara's moderators cannot collaboratively construct the complaint with the contributor. They must rely on the slower method of contacting, waiting for and following-up with contributors to re-record their post with the necessary changes. Thus even easily-fixed issues like missing details or unclear speech take a long time to solve, with the effect that especially in rural or mountainous regions where cellular connectivity is limited, many posts remain unpublished simply because the contributor's phone could not be reached. Such contributors report feeling let down because neither was their post published nor did they receive any feedback for improvement.

Both the CM Helpline and CGNet Swara "*start with the premise that no one deliberately posts a lie*" (CGNet moderator GS3). However, the latter, as a citizen-run service that makes grievances public, has more to prove (and lose) and places an explicit emphasis on verification, going the extra mile to establish the authenticity and gravity of incoming posts. When handling sensitive issues, moderator GS6 says, "*even if it's from people we know, we fact check it very minutely.*" Indeed, we found that social activists, mainstream journalists and even some government officials trust the posts on CGNet. The implication, of course, is that posts that cannot be verified or those not considered important enough never see the light of the day.

The absence of detailed verification on the CM Helpline points to an interesting tradeoff between trusting citizens and burdening government officials. While operators believe that "*95% of the complaints are good, genuine ones*" (operator CS3), the officials we interviewed put the figure closer to 25%, reporting that they have to bear the brunt of unverified complaints. "*In one case,*" says official CO2, "*a person complained saying they didn't know whether their [bank] account had been opened under the correct scheme, so they filed a complaint instead of checking with the bank. [...] If you open an account under a certain scheme, it will be opened under that scheme! You can't file a complaint because you don't know!*" While agreeing that this is a good strategy from the citizen's point of view, to official CO1 it results in a situation where "*officials are now accountable for everything but there is absolutely no citizen accountability.*"

5.3 Responding

CGNet Swara and CM Helpline take different approaches to ensuring that grievances receive a timely response. There is a considerable overlap in the cases that the two initiatives handle: around 75% of our observed CM Helpline complaints would be accepted for publication on CGNet Swara, and 81% of CGNet's impact posts would count as grievances in the CM Helpline (the rest would be classified as suggestions and demands).

The CM Helpline adopts a systematic approach: each complaint advances through predefined fixed-duration stages, with one person responsible for it at any given stage. CGNet Swara on the other hand takes a more ad-hoc approach, trying several different tactics and leading with whatever works for a particular case. Further, being a *direct line to the government* gives the CM Helpline a distinct advantage over citizen-run initiatives in many ways. First, the CM Helpline is quite literally the CM's helpline: the chief minister started the helpline and continues to take an active interest in its functioning and outcomes, with monthly review meetings where nodal officers are answerable for their department's complaint statistics. Second, due to the mapping of officials within each department, complaints are directed to the very people who have the power (and responsibility) to respond to them. Third, the helpline has the potential to make officials take grievance resolution seriously. We were told, for instance, that the CM

planned to introduce financial penalties for officials with unsatisfactory track records. The CM Helpline thus places the onus of responding to complaints squarely on the officials.

CGNet Swara, as an outside organization, is limited in two ways. First, follow-up personnel, while instrumental in orchestrating the process of resolution, do not have the power to actually respond to the grievance themselves and must convince officials to take note of and act upon grievances. Second, officials are by no means answerable to CGNet. CGNet tries to overcome these limitations in several important ways. First, follow-up personnel work towards developing good relationships with local officials. "*Making government officers respond to you is an art,*" says field champion GF4. "*We must be very careful not to be too intrusive but at the same not be too lax in our appeals. We have to get our work done.*" Next, grievances are made public, and they contain at minimum the designations and phone numbers of concerned officials. This enables citizens and mainstream media to contribute to the advocacy process by making calls to officials on the one hand, while getting corrupt officials to cooperate out of the fear of public shaming, on the other.

While the CM Helpline's systematic approach and insider access give it several advantages, it can be too rigid in some cases. Responding to a complaint can be a complicated process, not always amenable to the CM Helpline's seven-day deadline. CGNet Swara's approach implicitly acknowledges this. Not responding quickly, says CGNet contributor GC8, is "*not just about an officer who doesn't want to help or a government worker who isn't doing his or her work. It's also that sometimes we take our problems when money has been allocated elsewhere or we have to wait for money to be sent.*" This happens when officials must apply for funds from departmental budgets or wait for activities such as elections to finish in order to take action and resolve the complaint. Such cases make the CM Helpline's open-closed dichotomy seem a bit meaningless. Indeed, we observed several instances where officials closed the complaint because they could only respond once the money was released or after elections, leading not only to unsatisfied complainants but also no further CRM-based complaint tracking. Also, because officials are only answerable to their superiors, even respondents who were happy with the response they received said that even with the CM Helpline, the lower level officials continue to operate as they always did: "*if they want to do something after two months, they will do it only after those two months, whether it is the CM's helpline or the PM's,*" says complainant CC5 (who is very appreciative of the helpline itself). Bemoaning the lack of citizen involvement, CC5 continues, "*but if the program [CM Helpline] could be handed over to legislators or some local people's representatives, [...] then I think more complaints will get solved. And we should be given the right that if the work isn't done then action will be taken against them [officials] or something like that; then perhaps they will think that the work should get done quickly.*"

5.4 Resolving

The CM Helpline and CGNet Swara use different strategies to figure out whether a grievance can be considered solved: where the CM Helpline actively solicits complainant satisfaction via phone calls for all partially closed complaints, CGNet Swara considers every grievance unresolved until a contributor calls back to record an impact post. An obvious implication is that CGNet risks underestimating the number of resolved grievances. The CM Helpline's strategy of actively closing complaints counters this risk but makes the potentially problematic assumption that closing a complaint means it has been resolved. Here is an excerpt of a call

on the CM Helpline, in which the caller complained about not receiving compensation for the destruction of his soybean crop and not being given the ID number of the survey that the local village accountant used to assess the crop damage (caller C, operator O).

C: *I want to check the status of my complaint number <number>.*
[...]

O: *The officer has replied saying that you're not eligible since the crop loss is less than 25%.*

C: *What is the survey number?*

O: *It has not been provided. The complaint has been closed.*

C: *What?! Why?*

O: *If you are unhappy, please re-register a complaint by calling 181 and pressing 2.*

Here is the thread for this complaint in the CM Helpline's CRM system (operator O, CRM system S, officials L1, L2 and L3 at levels one, two and three respectively):

O: *It was told by the complainant that their soybean crop got destroyed and they have not yet been compensated. [...] the complainant is not being given the survey number and is being asked to pay [a bribe]. The complainant wants a resolution as quickly as possible.*

S: *Complaint has been registered assigned to official L1.*

L1: *Ineligible since the complainant's crop loss is under 25%.*

S: *The complainant's consent or lack thereof needs to be checked.*

O: *The complainant is not satisfied with the resolution, and requests that the complaint be escalated to a higher official.*

S: *Due to dissatisfaction of the complainant, the complaint is being sent to official L2.*

S: *Since the official did not take action within the prescribed time, the complaint is being sent to official L3.*

L3: *Ineligible since the complainant's crop loss is under 25%.*

S: *The complaint has been [force] closed.*

There are a number of things to note in this case. First, we see a direct illustration of the fact that closing a complaint does not equal resolution, at least not for the complainant. In fact, the complainant does not even seem to have been informed that their complaint had been closed. Second, though the operator's initial description of the complaint includes the fact that the complainant has not been given access to their survey number, none of the officials who were assigned the complaint make any note of it in their response. Third, the role of helpline operators is clearly limited only to registering complaints, noting down officials' responses, and asking complainants for satisfaction. Thus operators, who constitute the citizen's only point of contact in the CM Helpline's process of grievance resolution, are powerless intermediaries who can neither influence nor question the actions of officials. Fourth, notice that official L3 responded with the exact same resolution in the same words as official L1, though the complainant expressed dissatisfaction at L1's response.

This is not a one-off occurrence. We found instances of repeated responses in over 40% of the complaints we observed. In fact, in one of these complaints, officials gave the exact same response eleven times before the complaint (then at level four) was marked *Closed-Complainant Unreachable*. In these cases, it is not always clear who is in the wrong: it could be that the official is responding in the best way possible. But taking the caller's perspective, we can see why they might be frustrated and suspicious after repeatedly receiving the same response.

In another case, complainant CC6 who is himself a government clerk reported that another official coerced him offline into giving up on his complaint, which was eventually force closed. CC6 says,

"I came under so much pressure from the CMO [name], and the head politician [...] So I gave up following up on that complaint."

Indeed, equating complaint closure with resolution is not problematic only in the case of force closed complaints. Take the example of respondent CC4: a quick reading of his complaint in the CM Helpline's CRM system reveals that it was closed with the satisfaction (*Closed-Complainant Satisfied*) of the complainant. During our interview, however, CC4 revealed that his complaint remains unresolved in reality. After receiving the same response repeatedly across all four levels of officials, says CC4, *"I had no other option and I didn't know what else to do. I had made the complaint in many [levels], but now what was I to do... so I told them that I'm satisfied."*

We can trace these problems to two choices made in designing the CM Helpline: first, citizens cannot initiate an interaction with officials, interfacing instead with intermediaries (operators), and second, complaints are not publicly available (except over the web if one has the correct complaint number). Thus in spite of all the checks and processes put in place by the CM Helpline, officials remain free from the responsibility of being answerable to anyone other than their superiors, thus replicating the structure (and weaknesses) of the very existing channels that the CM Helpline is meant to act as remedy for.

This is where CGNet Swara shines. As contributor GIC3 puts it, once a post is published, *"the world then knows about what is happening."* Even if officials don't subscribe to CGNet themselves, says GIC2, *"many people listen and [...] people will come and tell them [officials] that such and such story is trending now and we think you should listen."* This was borne out in our interviews, with several officials acknowledging that they did indeed receive calls from CGNet listeners urging them to take action, some of which were the first notice the official had received of the issue, and contributors such as GIC6 attesting, *"Before CGNet they [officials] would hardly do any work. We had to pay bribes for getting even what were our legitimate rights. The fact that we have CGNet now and that we can post news as and when we like has acted as a great deterrent."* By making posts publicly available and enabling direct contact with officials, CGNet Swara makes officials answerable not just to their superiors, but to the citizenry at large.

Further, while CGNet Swara's conservative strategy of relying on self-reported impact posts to estimate the number of resolved grievances risks underestimation, it also guards CGNet against the CM Helpline's problem of equating complaint closure with resolution. We found that CGNet's impact posts are not merely contributors *consenting to* or *being satisfied* with the action taken, but voluntarily-reported success stories that affect many people. As mentioned previously, our sample of 95 impact posts shows that each one reflects benefits for an average of 61 people, and a maximum of 850 people. Each of these people could register a separate complaint on the CM Helpline, thus producing multiple closed complaints for the same resolution. We encountered one such shared situation in the eight officer helpline calls we observed.

The CM Helpline makes a distinction between complaints and suggestions and demands. Callers who register a suggestion or demand receive no resolution-period guarantees and cannot track the status of their suggestion or demand. Given the state monopoly on basic services such as electricity and water [18], it is likely poor and marginalized communities who are most in need of requests that would fall under suggestions and demands (e.g., a new hand pump where there is none). In fact, requests that would get classified as suggestions and demands on the CM Helpline make up many of CGNet Swara's most impactful posts.

Despite its high potential, CGNet Swara is not perfect. Though all grievances are considered unresolved until corresponding impact posts are reported, only a small number of grievances are actively tracked at any given point due to the small number of full-time follow-up personnel. This, however, is a limitation of its implementation, as opposed to its design.

6. DISCUSSION

CGNet Swara and the CM Helpline are just two points on a spectrum of possible intermediation between citizens and the state. Based on our observations of both systems, we highlight broader lessons learned and offer recommendations for designing future ICT-enabled grievance redressal systems.

6.1 Lessons learned

Transparency is needed in both workflow and content

The notion of transparency is typically limited to making content publicly available, but in the context of grievance resolution, it is crucial to adopt transparency in both workflow and content.

The CM Helpline and CGNet Swara both have elements of transparency and opaqueness in their workflow and content. While CM Helpline operators only provide callers with the current status and stated resolution of the complaint, their website provides a trace of the progress of a complaint through the four levels, without names or phone numbers of officials. However, without a specific complaint number, a third party (e.g., a watchdog organization) cannot view this trace. Also, other than the stated resolution, complainants have no visibility into officials' actions, and as described earlier, even in our small sample of cases we frequently witnessed concern or dissatisfaction among complainants. Moreover, in grievances that are classified as suggestions or demands, complainants have no visibility or control on the way in which their request is handled, if at all.

CGNet Swara, on the other hand, makes publicly available all posts that are complete and are not personal issues. Additionally, every post contains a description of the grievance, the steps the complainant has taken to resolve it and the names and numbers of officials responsible for resolution. While, despite our best efforts, we do not have the data to claim that resolution occurs primarily as a result of CGNet's transparency, anecdotal narratives highlighted in section 5.4 show that at least contributors on CGNet perceive its transparency to be an important element in spurring officials into action. Unfortunately, while the curation carried out by CGNet's moderation process is a key enabler of transparency, that process itself remains a black box for outsiders. As reported previously [12], the criteria used by moderators are not consistently communicated to callers, leading to an unanticipated opaqueness that disappoints and even disillusions would-be contributors.

Thus, in order to maximize transparency, it is crucial to open up not only the data but also the workflow, and provide some curation to prevent an overload of raw data.

Participation, both individual and collective, is needed throughout the workflow

Enabling citizen participation is important not only at the stage of raising a grievance but throughout the process of resolution.

The CM Helpline enables participation in raising a grievance in that it accepts and attempts to resolve all incoming complaints that fit the helpline's criteria. Moreover, in the resolving stage, complaints are considered unresolved until the complainant says they are satisfied with the resolution, except force-closed complaints or if the complainant's phone is not reachable. These measures ensure

that citizens' concerns are given a voice. Since helpline data is not transparent, however, the complainant's voice is heard only by those within the government and in most cases only by those directly responsible for dealing with that particular complaint, thus foreclosing the possibility of collectivizing around it. This not only restricts participation to the individual level, but also restricts participation to the act of raising a grievance and that of expressing (dis)satisfaction with the resolution.

CGNet Swara places an explicit emphasis on enabling participation via collective action. This is reflected in several ways: first, CGNet prioritizes grievances affecting multiple people and does not accept personal problems that are not widely applicable. Second, it expects contributors to try 'individual-level' means, such as applying to governmental service delivery and grievance resolution channels, before posting. Third, all grievances are published in the contributor's own voice. Fourth, all published grievances are actionable, providing listeners with the names and numbers of officials to call on behalf of the contributor. Fifth, CGNet's outreach activities create a network of trained *field champions*, who serve as local proponents in campaigning with officials. Finally, CGNet's follow-up team, with the help of local field champions, makes a sincere effort to have every published post resolved. Thus, CGNet encourages individual and collective participation in responding to and resolving grievances. Due to the way CGNet Swara is designed, it is impossible to track the relative importance of these mechanisms or to decide whose participation via which channel brings about a resolution. This is an important avenue for future work. It must also be noted that in part due to the focus on collective participation, CGNet Swara does not publish all incoming messages. Thus there is limited participation in raising and reviewing grievances.

To summarize, participatory governance means involving citizens—as individuals and as communities—throughout the process of resolution. Transparency can help to enable this participation.

Accountability remains a delicate balance between internal and external actors

Schedler [21] and Narayanan [17] say that answerability and enforcement are necessary and sufficient conditions for governmental accountability. While the CM Helpline's streamlined workflow with short resolution windows, automated escalation, and citizen satisfaction aims to make officials *answerable* to citizens, it is only partially successful in doing so. By allowing officials to force close complaints and restricting citizens to talk to intermediaries as opposed to officials themselves, the CM Helpline limits both the degree to which officials are answerable to anyone other than their superiors, and the range of actions that complainants can take if dissatisfied. The CM Helpline plans to tackle *enforcement* by introducing financial penalties for officials who do not maintain a satisfactory track record. This might help enable enforcement, but we foresee strong opposition from unions that protect government employees against dismissals and penalties [17]. Moreover, given the CM Helpline's lack of transparency, the power to enforce sanctions would still remain primarily in the hands of the state, as opposed to the citizenry.

CGNet Swara aims to transfer some of this power to the citizens. By making posts publicly available and publishing the names and phone numbers of concerned officials, CGNet makes officials *answerable* to citizens and mainstream media, not just superiors. Contributors can also *enforce* sanctions in the form of public shaming in getting corrupt officials to act on their grievances. Further, CGNet considers published grievances unresolved until there is a self-reported impact post. While this enables citizens to

increase the accountability demanded of the state, the accountability of CGNet Swara itself is unclear. Citizens cannot hold CGNet accountable for unpublished or unresolved grievances, given that it is an external, non-state actor with neither the responsibility nor the authority to actually resolve their grievances.

To summarize, we believe that initiatives that are internal to the state, that keep their data private, and maintain existing citizen-state power differentials cannot, in isolation, enable complete accountability. While initiatives external to the state have several advantages on this front, they also need careful design to ensure effective participation, transparency and accountability.

Breadth and depth of impact are both important

While initiatives internal to the state can address a broad range of grievances on a large scale, those external to the state can facilitate the resolution of tougher grievances that slip through the cracks.

The CM Helpline accepts almost all grievances from individual complainants. CGNet Swara, on the other hand, expects contributors to have tried applying to governmental service delivery and grievance resolution channels before posting. Indeed, CGNet has published several posts in which contributors mention that they tried applying to the CM Helpline before escalating their grievance to CGNet. Thus, CGNet Swara accepts grievances that, in a sense, the CM Helpline can't or won't resolve. Further, CGNet prioritizes grievances affecting multiple people and does not publish personal problems that are not widely applicable. Hence, CGNet's grievances are inherently harder to solve and are often cases of long-standing neglect or marginalization that affect a large number of people. This is evidenced by impact posts that each report directly affecting sixty people on average. In other words, CGNet Swara has taken a deliberate decision to restrict the breadth of its reports in order to deepen the impact of the cases it takes on. This tradeoff between breadth and depth is both a designed and an emergent property of both systems, and could potentially be adjusted based on the context.

Of course, CGNet Swara is able to position itself as a watchdog only because the CM Helpline and other state mechanisms are effective at handling the day-to-day grievances (e.g., collection of waste) that are numerous but relatively straightforward to resolve. Thus, an external organization can provide depth to the breadth of impact made possible by a direct line to the government.

6.2 Recommendations

With these lessons in mind, we first consider how the CM Helpline and CGNet Swara can be improved, and then recommend broader best practices for ICT-enabled grievance redressal.

The CM Helpline's quick, time-limited, multi-stage workflow is useful for day-to-day, short-term complaints involving straightforward resolution. However, officials and citizens alike would benefit from more flexibility in the case of more complicated grievances. Lacking this, complaints that do not fit into such a short timescale are either closed, leaving the complainant with no recourse but to try again later or give up; or remain open for long periods of time until the actual resolution comes, making officials appear incompetent. The CM Helpline should also give more importance to (and, at the very least, a tracking mechanism for) grievances classified as suggestions and demands, particularly those involving basic needs such as water and electricity. Finally, making grievance data publicly available and appointing an external watchdog agency would go a long way towards increasing transparency. Simply making data public is not sufficient, however, and might in fact dilute the impact of any such measure. The

expanse of data is of no use without curation, interpretation, and calls to action that citizens can digest and collectivize around.

CGNet Swara would do well to take pointers from the CM Helpline's streamlined tracking system, especially so that posts do not get lost during moderation. A simple measure would be to assign each recorded message a tracking number that contributors could use to check the status of their message in the moderation process. Contributors would also benefit from a faster and more transparent moderation process. Given that CGNet focuses on regions with partial if not severely limited connectivity, one approach is as follows: as before, if moderators feel that a post, though suitable in content, is lacking details or needs better structuring, they should call the contributor to explain the problem. However, instead of asking the contributor to call and re-record later on, contributors should be able to record missing information while on the phone with moderators, who can provide synchronous feedback and edit the original audio to include new information.

Starting from a blank slate, could a single system offer the best of both of these initiatives? Yes and no. We believe that their workflows could converge to a single set of best practices: connect callers to live operators with a fall back to IVR outside of operating hours, provide tracking mechanisms for all grievances, and make grievances publicly available. However, in order to achieve the objectives of increasing citizen participation, transparency and accountability, the system needs elements that are both internal and external to the state. Such elements are difficult to combine in a single platform, because if the state is seen to be involved, any external component risks being interpreted as just another internal agency. Mohan et al. [14], for instance, report this in the case of Helpline, a state-run grievance redressal system in Karnataka, India. An independent NGO was enlisted to serve as intermediary between the state and the citizenry, so that citizens felt confident that their complaints were being heard by an impartial third party. However, because the NGO was citizens' only interface to the Helpline, to citizens the NGO represented the state.

For this reason, our ultimate recommendation is for a two-system model: a state-run initiative that serves as the first point of contact for citizen grievances and information-seeking, and a citizen-led initiative that in effect serves as watchdog and avenue of escalation for the state-run initiative. In our view, the parallel existence and ongoing interplay between similar initiatives such as the CM Helpline and CGNet Swara is not only beneficial, but necessary. While the CM Helpline excels in the resolution of day-to-day, short-term complaints, the strength of CGNet Swara lies in tackling, or often simply bringing to light, the larger, longer-term grievances that are complex and harder to resolve.

7. CONCLUSIONS

This paper seeks to make design recommendations for upcoming citizen-centric e-governance initiatives, specifically in the context of grievance redressal. We study two collocated, cotermporal initiatives: the CM Helpline, a state-run good governance initiative and CGNet Swara, a citizen-run platform. We analyze the strengths and weaknesses of both systems vis-à-vis their technology usage, levels of transparency, and relationship with the government, and make recommendations for future initiatives.

In addition to its research contribution, this study has a real-world audience amongst policymakers in India. For example, in the state of Chhattisgarh (which neighbors Madhya Pradesh), policymakers have asked how they can best leverage ICTs for grievance redressal. Are independent initiatives such as CGNet Swara needed, or is a state-sponsored solution sufficient? The analysis in

this paper suggests that both systems have important roles to play. A state-run initiative serves as the first point of contact for citizen grievances and information-seeking, and a citizen-led initiative serves as watchdog and avenue for escalation for longer-term grievances affecting a large number of people. Such a combination has the potential to foster increased participation, transparency and accountability in governance.

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8. REFERENCES

- [1] Bertot, J.C., Jaeger, P.T., and Grimes, J.M. Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly* 27, 3 (2010).
- [2] Bhatnagar, S. Transparency and corruption: Does e-government help? *Open Sesame: Looking for the Right to Information in the Commonwealth*, (2003).
- [3] Bhatnagar, S.C. and Singh, N. Results from a study of impact of E-government projects in India. *ICTD*, (2009).
- [4] Bhatnagar, S.C. Assessing the impact of e-government: A Study of Projects in India. *ITID* 6, 2 (2010).
- [5] Bussell, J. Political incentives and policy outcomes: Who benefits from technology-enabled service centers? *ICTD*, (2009).
- [6] Chakraborty, D. and Seth, A. Building Citizen Engagement into the Implementation of Welfare Schemes in Rural India. *ICTD*, (2015).
- [7] Donner, J. The Rules of Beeping: Exchanging Messages Via Intentional "Missed Calls" on Mobile Phones. *Journal of Computer-Mediated Communication* 13, 1 (2008).
- [8] Gulaid, M. and Vashistha, A. Ila Dhageyso : An Interactive Voice Forum to Foster Transparent Governance in Somaliland. *ICTD (Notes)*, (2013).
- [9] Heeks, R. Understanding e-Governance for Development. (2001).
- [10] Kuriyan, R., Toyama, K., and Ray, I. Integrating social development and financial sustainability: The challenges of rural computer Kiosks in Kerala. *ICTD*, (2006).
- [11] Madon, S. *E-governance for development: A focus on rural India*. Palgrave Macmillan, 2009.
- [12] Marathe, M., O'Neill, J., Pain, P., and Thies, W. Revisiting CGNet Swara and Its Impact in Rural India. *ICTD*, (2015).
- [13] Matheus, R., Ribeiro, M.M., Vaz, J.C., and de Souza, C.A. Anti-corruption Online Monitoring Systems in Brazil. *ICEGOV*, (2012).
- [14] Mohan, A.K., Cutrell, E., and Parthasarathy, B. Instituting Credibility, Accountability and Transparency in Local Service Delivery?: Helpline and Aasthi in Karnataka, India. *ICTD*, (2013).
- [15] Mudliar, P., Donner, J., and Thies, W. Emergent Practices Around CGNet Swara , A Voice Forum for Citizen Journalism in Rural India. *ICTD*, (2012).
- [16] Mudliar, P. and Donner, J. Experiencing interactive voice response (IVR) as a participatory medium: The case of CGNet Swara in India. *Mobile Media & Communication*, (2015).
- [17] Narayanan, S. Accountability and the New Media: Use of ICTs in Governance in India. *ICTD*, (2010).
- [18] Rajalekshmi, K.G. E-governance Services Through Telecenters: The Role of Human Intermediary and Issues of Trust. *ITID* 4, 1 (2007).
- [19] Ray, S. Reinforcing accountability in public services: an ICT enabled framework. *Transforming Government: People, Process and Policy* 6, 2 (2012).
- [20] Reserve Bank of India. *Handbook of Statistics on the Indian Economy*. 2012.
- [21] Schedler, A., Diamond, L., and Plattner, M. *The self-restraining state: Power and accountability in new democracies*. Lynne Rienner Publishers, London, 1999.
- [22] Schwittay, A. Incorporated Citizens: Multinational High-Tech Companies and the BoP. *ITID* 8, 1 (2012).
- [23] Seth, A., Katyal, A., Bhatia, R., et al. Application of Mobile Phones and Social Media to Improve Grievance Redressal in Public Services. *M4D*, (2012).
- [24] Srinivasan, V.A., Vardhan, V.A., Kar, S.B., et al. Airavat: An automated system to increase transparency and accountability in social welfare schemes in India. *ICTD (Notes)*, (2013), 151–154.
- [25] Vasudevan, R. Changed governance or computerized governance? Computerized property transfer processes in Tamil Nadu (India). *ICTD*, 2006.
- [26] Veeraraghavan, R. Dealing with the digital panopticon: the use and subversion of ICT in an Indian bureaucracy. *ICTD*, (2013).