Ila Dhageyso: An Interactive Voice Forum to Foster Transparent Governance in Somaliland

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ABSTRACT

In many developing countries, it is challenging for remote communities to access reliable and accurate sources of news. This paper examines the case of Somaliland, where there is a fragmented media landscape that is subject to tribal biases and manipulations. Often, exaggeration or misrepresentation of facts prompts conflicts and hostility towards authorities, especially in remote areas. To foster more transparent communications between governmental institutions and the public, we built and deployed an interactive voice forum, accessible to anyone with a basic mobile handset. Called *Ila Dhageyso*, this forum enables callers to listen and respond to official recordings from the Presidential Ministry, as well as to the responses of other callers. Audio messages are also threaded and posted on YouTube to involve Somaliland people in diaspora. From December 2012 to April 2013, Ila Dhageyso logged 4,300 posts from callers. This paper reviews the media climate and geopolitical circumstances in Somaliland that motivated the formation of Ila Dhageyso. It also describes the design, implementation, and experiences gained in the first exploratory deployment of the service.

Categories and Subject Descriptors

K.4.1 [**Computers and Society**]: Public Policy Issues; H.5.2 [**Information Interfaces and Presentation**]: User Interfaces

General Terms

Design, Human Factors

Keywords

Interactive voice response, voice forum, e-government

1. INTRODUCTION

Media plays a critical role to enhance transparency and accountability in any democracy. However, media has become more sensationalized in the past few years and has often failed to become an independent and unbiased civic media platform which should be responsible to broadcast information from critical

governmental agencies and collect feedback from citizens. The need to have an unbiased media is more critical in countries like Somaliland where misinformation is the major cause of conflicts between citizens and governmental agencies.

A potential remedy for this situation is a direct and unfiltered media, such as the C-SPAN network in the United States, which provides unbiased coverage of contentious political issues. Unfiltered communication mediums are even more important in emerging democracies and in post-conflict countries. Social media has also enabled us to create online communities and share information in a direct and participatory way. However, these technologies are beyond the reach of majority of marginalized communities in the developing world.

77% of the world's 6.8 billion mobile subscribers are based in the developing world and majority of them rely on a basic phone to satiate their communication needs by making voice calls. High mobile penetration in regions like Somaliland makes mobile communication an excellent vehicle for civic engagement and gathering feedback from the public about critical issues. Additionally, due to literacy constraints in the developing world, there is an increasing demand and need to create voice-based applications to access information and create knowledge.

This paper describes *Ila Dhageyso*: an initiative to enhance communication between Somaliland's central government and its citizens using voice-based technology. The system consists of an interactive voice forum, whereby members of government can record official postings and make them available for listening over the phone. Callers are able to respond to posts, and to listen to responses that others have recorded. In order to make the conversation accessible to the international diaspora, all recordings are also mirrored on a website and a YouTube channel. Recordings undergo moderation prior to being published.

Ila Dhageyso provides accurate, reliable, and direct access to information to the public. Thus, it attempts to address the problem of misinformation that is the result of media fragmentation and polarization along tribal lines in the Somaliland society. In this paper, we describe the design, implementation, and exploratory deployment of Ila Dhageyso. Within a span of five months, the system logged over 4300 recordings. We conduct an initial content analysis by categorizing 74 posts on two different topics. We find that many callers record messages that are unrelated to the official post, yet often provide critical commentary regarding other aspects of governance in Somaliland. Consistent with prior voice forums, we also see a desire for callers to share songs, poetry, and scripture.

While this project is still a work-in-progress, we hope that the experiences described in this note are helpful to researchers and practitioners seeking to foster political transparency and social inclusion via mobile voice applications.

2. RELATED WORK

Increasingly, interactive voice response (IVR) systems are being used to disseminate information and create communities around specific topics. Prominent examples in the realm of citizen engagement include CGNet Swara [7] and Gram Vaani [1]. Both systems enable callers to record messages and share them with an Internet audience, as well as with other callers. Ila Dhageyso is distinguished by its direct link to government actors, who seed discussions by recording official messages. It also features a threaded conversational interface, whereby responses to the same topic are grouped together. Other voice forums with similar structure and findings are Voikiosk [2] and Avaaj Otalo [8].

Traditional media platforms have also played a role in informing and engaging citizens about policy-related issues. CSPAN is a prime example of an objective source of information. In the United States, the Cable-Satellite Public Affairs Network (C-SPAN) grew out of the desire of a few congresspersons to add visibility to the inner workings of government. It also grew out of the efforts of innovative and passionate journalists, who wanted the public to see policymaking in real time, as the country was going through a turbulent period after the Vietnam War and the Watergate scandal (Frantzich et al, 1996). Since then, C-SPAN has been credited with altering the quality and length of speeches in the congress. According to Norman Ornstein of the American Enterprise Institute, the presence of C-SPAN has "improved the quality of deliberations… Before, there was sloppiness about what went on the floor. But now they know somebody is watching, so members do more homework. As one member put it, `no one wants to look like a fool when the cameras are on.'"

The setting and the necessities that led to the creation of the C-SPAN network are not dissimilar to the current state of democracy in Somaliland. Three main factors contributed to the creation of C-SPAN in the United States: (1) increasing popularity of television as a medium for news consumption as opposed to print, (2) wide adoption of cable television, and (3) an extremely low point of American politics. Somaliland, as a young democracy in a turbulent region, needs to adopt public broadcast of important governmental debate, so that engaged parties can be assured of the transparency in the political process. Providing an audio feed of the most important policy decisions could help increase access to information and meaningfully engage Somaliland's citizens.

3. THE SOMALILAND CONTEXT

3.1 Geopolitical landscape

Although Somalia has been the archetype of a modern failed state, the Northwestern region of the country has been stable, safe and has had a functioning democracy. Somaliland declared independence from Somalia following the collapse of the Somali Republic in 1991 [5]. Somaliland has been operating independently from the rest of the county, enjoying a level of peace and progress yet to be realized in Somalia [9]. Despite Somaliland creating its own constitution and government, it remains unrecognized as an independent nation [9].

Understanding Somaliland's political institutions requires knowledge of the complex political history of the region and the social structure of the Somali society. In the Somali culture, "genealogy is at the center of the Somali social system." [5] Clan membership is determined by tracing the paternal lineage through an intricate series of sub-clans to one of the four main Somali tribes. Sub-clans form alliances to form political entities that can counterbalance other tribal groups. Prior to European colonization in the region, there was no single political entity that ruled [4].

Because of the fragility of political institutions in Somaliland, instability is always a lurking danger. The Somaliland federal government strikes a delicate balance between consolidation of public institutions to maintain control of power and decentralization to compromise with regional forces and tribal leaders. In post-conflict countries, building a reconciliatory political identity is a complex process. Trust between opposing tribes and political groups is a major block in the reconciliation and peace process. Citizens often identify with specific groups to gain protection and influence in political negotiations. In tribal societies, this becomes more evident due to the traditional structure of the political institutions. Tribal leaders become a medium between the elected government and the masses.

In June 2012, Opinion Research Business conducted a nation-wide public opinion poll, questioning Somaliland citizens about democracy, politics and general issues, and priorities affecting their local area and Somaliland as a whole. Although the poll revealed generally high levels of optimism, with 86% agreeing that Somaliland is moving in the right direction, 55% of those surveyed indicated that the central government is out of touch with the affairs of the people. In addition, an overwhelming 81% of those surveyed indicated that they don't make complaints or write letters to local and central government or to media outlets. This lack of meaningful communication between the Somaliland citizens and their representatives is mainly due to a lack of effective communication platforms. In the same poll, people indicated that elected leaders spend little time listening to them.

3.2 Media landscape

The low literacy level of the Somali population (estimated to be around 37% has always been an obstacle to print media and has favored broadcast media such as radio and television. Radio is the most dominant media form in Somaliland. While the government does not allow private radio stations to operate, it does permit the BBC and Voice of America to run FM relays. The BBC has been broadcasting since 1957, and is arguably the most influential media outlet in the region. The Voice of America established a similar nationwide radio service in 2007, mainly to combat the influence of ultra conservative groups. There is only one government-run radio station, and until October, 2012, it was limited to the area in and around the capital, Hargeisa. This imbalance of regions creates a sense of political alienation between rural communities and the capital city [12].

The media landscape in Somaliland is fragmented and is subject to tribal biases and manipulations [12]. Because of the fragility of tribal structure in Somaliland, exaggerating or manipulating facts can prompt conflicts and hostility towards authorities, especially in remote areas like Sool and Snaag in the east of the country. Over the years, the Somaliland government jailed a number of journalists, accusing them of inciting tribalism, 'spreading false news', and defamation [10]. In 2007, the Somaliland parliament passed a controversial press law that many journalists saw as an attempt to curb independent media [13]. Current laws do not provide clear guidelines for when journalists cross the limits of freedom of speech in Somaliland. Although the government has all the rights to maintain the delicate peace between different groups and regions in Somaliland, establishing off-limit topics are the first step to censorship, as history has shown. Additionally, independent assessment shows that media in Somaliland suffers weak capacity in terms of education, skill, and resources [6].

Ila Dhageyso aims to compensate for the shortcomings of the media and provide a platform to increase communication between the public and the government institutions in Somaliland. While there is no official number of mobile subscribers in Somaliland, the unofficial estimate is between 21-28% of the Somaliland population. Telecommunication in Somaliland is one of the most vibrant and advanced in the region. Citizens have access to voice, data, mobile banking, landlines, and affordable local and international calls. This makes the mobile phone a very attractive platform for extending a transparent media service to citizens.

4. SYSTEM DESIGN

To reach out to low-literate users, Ila Dhageyso is designed as a voice-based application that is accessible via mobile phones. Ila Dhageyso is structured as an audio discussion forum. Each thread of discussion starts with an "official posting", which is recorded by a government staff member. Using DTMF keystrokes for navigation, callers can listen to official posts, record a response to an official post, or listen to responses that others have recorded. A moderator reviews all responses before making them public.

Ila Dhageyso's voice-based interface went through several design iterations and was tested for usability issues in the field in Hargeisa. We incorporated feedback from early users to simplify the call flow as much as possible by reducing the number of options at each step and streamlining the navigation.

We implemented Ila Dhageyso using IVR Junction, a free toolkit that makes it easy to establish a voice forum using an ordinary laptop and low-cost GSM modem [11]. IVR Junction connects an IVR server (Voxeo Prophecy) with online social media, such as YouTube, Facebook, Dropbox, and SkyDrive. As soon as a message is recorded via IVR, it is automatically uploaded to a YouTube channel. The moderator uses YouTube's administrative interface to add a title, summary, and tags to each post, and to control the posts' visibility on the web and the phone.

5. DEPLOYMENT

After conducting limited advertising on the government-owned radio station and newspaper, Ila Dhageyso was launched on November 19th, 2012. The service ran until May 1st with a few interruptions in between.

The Office of Communication of the President (OCOP) agreed to sponsor the initiative; OCOP agreed to cover 50% of airtime cost. Telesom, the largest telecommunication company in Somaliland, joined the initiative and provided a 50% discount on airtime. Together, these subsidies made the service toll-free for callers.

As this deployment represented an initial experiment, there were several limitations. First, we could afford only one telephone line; once this line was occupied, additional callers received a busy signal. The backend software was not stable during the launch, which led to three service outages. Also, because Internet service in Somaliland is not reliable and the backend depended on the cloud to synchronize and manage recordings, there was often a delay in reviewing posts from callers. Finally, as there were limited resources for hiring moderators, the first author served as the primary moderator for the duration of the study. Work obligations often prevented timely moderation of submitted posts.

6. USAGE STATISTICS

Ila Dhageyso was deployed before detailed analytics were in place. However, we derived basic statistics from the repository of content as well as call records from the phone company.

As of April 15th, 2013, callers had recorded 4363 postings. The average caller spent about 58 seconds navigating the content. More than 60% of users called Ila Dhageyso more than once.

The official posts spanned diverse topics, including local elections, budget, foreign diplomatic relationships, security issues, and economic issues. In turn, callers expressed colorful and diverse views on all of these issues. However, only a small portion of the callers recorded relevant and meaningful content. Often people did not respond to the "official posting", but chose to freely express their ideas. We examine the content more systematically below.

7. CONTENT ANALYSIS

7.1 Methodology

Due to the large number of posts, a comprehensive analysis of the content was not feasible. Instead, we chose to focus on callers' feedback surrounding two topics:

a) People's reactions and suggestions for the newly elected local councils in different districts of Somaliland.

b) England's decision to pull out UK based organizations and its citizens from Somaliland for security reasons.

Prior to moderation, the first topic had roughly 598 responses, while the second topic had 2320 responses (this topic was open for discussion for longer). We selected a small sample of 74 recordings (33 recordings from the first topic and 41 recoding from second topic). We applied systematic random sampling, where the start point was randomly selected in each topic and a five posting interval was made to keep sampling consistent. While we summarize all types of content below, for the purposes of thematic coding, we restricted attention to posts that would be made public following moderation, as this is the content that is ultimately visible on the system. In accordance with moderation policies, this meant that content was excluded from categorization if it was incoherent, irrelevant (song, jokes, stories, random stuff); or used inappropriate, hostile, or very controversial language.

The first author coded the content of each recording with help of two native Somali speakers. The content of selected samples was translated to English. Additionally, we assessed callers' sentiment towards the official government messages on a three point scale: positive, negative, and neutral. We also logged metadata such as the caller's gender and the general topic of their post.

7.2 Results

Most posts were not related to the official topic of discussion. Instead, they were songs, poems, reading of Holy Scriptures and other random comments. Some of these recordings were rich in content. Some were nomad poems or other famous cultural songs. In some postings, callers performed some kind of theatrical act, where two people talk back and forth. Prior projects in India have found similar outcomes [2, 7, 8]. People will appropriate new technology platforms and adopt them to their own social and cultural norms.

Those who made off-topic political comments expressed opinions on a wide range of other subjects. Callers discussed issues related to security, terrorism, the future of Somaliland, the relationship with Somalia, drought, lack of infrastructure, inflation, and lack of investment in agriculture, education and livestock. The frequency of these discussion topics is illustrated in Figure 1.
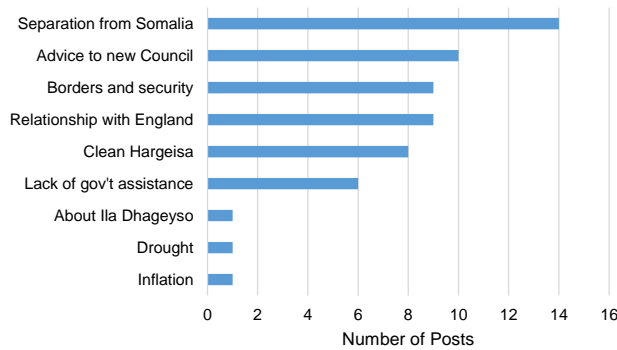
Figure 1: Topical categorization of Ila Dhageyso recordings.

Additionally, a large portion of posts by callers were complaints about the Somaliland government, especially by callers from the eastern parts of the country where there is a border dispute between Somaliland and neighboring Puntland region. Callers from these regions freely expressed their opinion about the current president and the State of Somaliland. Some of the statements from these callers are punishable by law. The Somaliland constitution punishes advocates for secession from Somaliland by jail time and sometimes by capital punishment. The moderator did not publish recordings that could jeopardize the callers' safety. However, posts in which callers used appropriate language and expressed differences with the Somaliland government in a respectable form were made public.

With respect to the official postings, we found that positive contents were less frequent than negative or hostile messages from callers. Of 74 recordings analyzed, 23% were positive, 38% were negative, and 39% were neutral. Additionally, a few callers did not realize the service is free of charge. Frequent callers expressed the need to have access to the content more often and complained of a busy signal. Also, 85% of callers in our sample were men.

8. DISCUSSION
In the early stage of this project, the focus was different: we sought partnership with the Somaliland parliament rather than the Office of Communication under the Presidential Ministry. Our objective was to increase the visibility of the Somaliland parliament by establishing a mobile service to post audio messages about legislation and to encourage public participation.

However, we were not able to launch Ila Dhageyso with the Somaliland parliament. For logistic and operational reasons, parliament members were not too enthusiastic about the initiative. The parliament does not have the operational capacity to sustain Ila Dhageyso. Somaliland parliamentarians do not have staff to help them carry out different responsibilities and tasks.

We interviewed two senior staff members and two parliamentarians about the feasibility of and usefulness of a service like Ila Dhageyso. They all expressed doubt about the usefulness of such a service. Moreover, because of generational difference, parliamentarians did not understand the technological difference between a phone-based IVR service and a traditional radio. It was difficult to convince elder parliamentarians of the usefulness of a mobile social application to increase interaction between the government and the public. One representative stated, "Somaliland citizens do not think that parliament is important. They don't see parliamentarian as people with influence and political power. I doubt people will call to discuss legislations."

Furthermore, the Somaliland parliament could not allocate funding for a toll-free number for Ila Dhageyso, which was clearly necessary to attract users. Consulting with local journalists and researchers, we sought partnership with the executive branch of the government. The newly created Office of Communication under the Presidential Ministry took interest in the project and we were able to establish rapport with the young staff at the office.

Thus, while we are pleased with the eventual traction gained in our deployment, the difficulty of establishing an appropriate partner in government suggests that replication of Ila Dhageyso may be a significant undertaking.

9. CONCLUSIONS AND FUTURE WORK
The goal of Ila Dhageyso was to stimulate direct communication between the Somaliland central government and its citizens, especially in remote areas, using highly-accessible IVR technology. It aimed to provide the public with accurate and reliable access to information and to address misinformation that is the result of media fragmentation and polarization along tribal lines in the Somaliland society.

Ila Dhageyso was deployed in a limited capacity and scope. Though usage has been higher than expected, a deeper evaluation is needed to understand the impact of the service. In the future, we aspire to conduct a systematic evaluation, surveying users and staff at the Ministry of Presidential Affairs. We also hope to conduct detailed interviews with the callers, assessing their demographic information, the usability of the platform, and their general conception of and sentiments towards the platform.

10. ACKNOWLEDGMENTS

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