

Design of Video-Sharing Kiosks for Liberia's Post-Conflict Reconciliation

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ABSTRACT

We are involved in a project to develop a series of video-sharing kiosk systems to be installed across Liberia, in an effort to assist the process of reconciliation following that country's recent civil wars. The project faces several challenges for interaction design, including low levels of print and computer literacy, and a harsh physical environment. In this paper, we describe those challenges in more detail, and outline our strategies for meeting them.

1. INTRODUCTION

The Republic of Liberia is a small West African nation of about 3.2 million people. From 1989 to 2003 the country was ravaged by two civil wars which inflicted gross violations of human rights upon many of its citizens, destroyed its economy and infrastructure, and displaced and polarized much of its population.

As with all civil conflicts, a major challenge in the aftermath of the war is the process of reconciliation which must be undertaken in order for the nation to heal and eventually function again as a united whole. The Liberian Truth and Reconciliation Commission (TRC) was created in 2005 by the Liberian legislature with the mandate of leading that process.

The TRC recognizes that communication must play a key role in the reconciliation process. Its mandate holds "that introspection, national healing and reconciliation will be greatly enhanced ... through a public dialogue which engages the nation." [1] Unfortunately, the civil war has all but eliminated the country's telecommunications infrastructure. To date, the country lacks a fixed line telephone network—the copper wireline infrastructure was destroyed or looted during the civil war. Furthermore, Internet penetration is extremely low, with perhaps 2 people in 1000 having access to the Internet. In stark contrast, the mobile phone sector is robust and growing with four competitive mobile operators offering service to over 400,000 subscribers [2].

Our group is interested in the possibilities for new media technologies to assist the reconciliation process in Liberia, specifically by supplementing the country's limited

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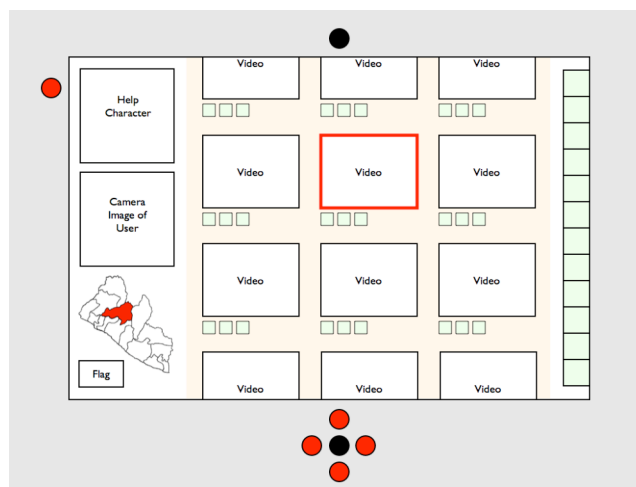


Figure 1. Wire-frame prototype of our latest design.

communications systems. In conjunction with the TRC, we are developing a video-sharing kiosk system, as many as 15 of which will be deployed across the country.

The kiosks will serve two chief purposes. First, they will act as an information distribution channel for the TRC. The commission will be able to distribute video messages about the commission's mandate, its members, its proceedings, and upcoming events. We expect that communications of this nature will do much to reinforce the legitimacy and presence of the TRC in the country. Second, the kiosks will allow Liberians to record their own video messages, which will be distributed to other kiosks around the country for others to view. We believe that this capability can play a considerable role in establishing the public dialogue described above.

2. USABILITY CHALLENGES

Universal usability is of prime importance for this project, for obvious reasons. This requirement presents several design challenges.

Most Liberians speak what is locally referred to as "simple English" along with one or more indigenous languages. Given the low level of basic education, Liberia is confronted with high levels of print illiteracy, which precludes the use of any text in the system's interface. Computer literacy is also understandably not prevalent. Not only does this imply basic unfamiliarity with operating a computer, but inexperienced users may have difficulty

even understanding what the system is capable of. Unless this is overcome, we cannot expect users to be interested in recording video messages.

We hope that the system will be used by Liberians of a wide range of ages and cognitive styles. Mitra and co-authors [3] have established that young children can readily learn to use computers with no instruction, regardless of their social, cultural, or economic background. But not all users can be expected to learn so quickly. The kiosk system should thus be simple enough to accommodate such users, while not stifling the exploratory tendencies of younger users.

Our design must also cater to various levels of experience in using the kiosk system itself. While first time users should be gently introduced to the system's capabilities and allowed to explore, users who, over time, become more familiar with the system should be able to engage in more targeted use—for example, to find the latest videos on a given subject or from a given region.

Finally, our system must run sustainably and stably within a relatively harsh environment: outdoors, in a hot and humid climate, and in a location with heavy levels of particulate air pollution. This precludes, for instance, the use of a touch screen which does not perform well in a dirty environment.

3. OUR APPROACH

With the help of the Liberian expatriate community in Atlanta, we have conducted an informal pilot study using a paper prototype of a previous design. That process informed a second design, pictured in Figure 1. We describe its principal elements below.

The box in the top left of the screen is the location for an assistant character. Similar to the one used in [4], the character offers verbal instruction as the user moves through the system. We intend to investigate the use of basic AI techniques to govern when the assistant should intervene. We have yet to determine whether the character should be a computer animation or a live action video. This question will be studied in future user consultations.

In addition to the assistant, the system will feature a full-screen introduction video, which will be displayed when users first approach the kiosk. The video will outline the functionality of the system, including dramatized examples of users performing typical tasks.

Beneath the assistant is a live image from the system's camera—effectively a mirror image of the user. We chose to include that image on the main screen as reinforcement of the system's capability to record video. At the same time, we are sensitive to the possibility that the camera image may inspire mistrust of the system. We plan to address this question during user evaluation.

Rather than imposing a hierarchical navigation system for videos, the system presents all videos on one continuous, scrollable canvas. This configuration was chosen to reinforce the main function of the system to new users—the first thing a user sees (after the introduction) is a set of watchable videos, instead of a menu.

In order to support more targeted use as described above, the system allows users to filter videos based on subject matter and county of origin. This is accomplished using *iconic tags*, which are similar to the textual tags common to many recent Web sites.

Each video is displayed with its associated tags, pictured as small boxes beneath the videos in Figure 1.

All iconic tags in the system are also displayed in the column of filter tabs on the right side of the screen. Selecting any such tab restricts the displayed videos to only those bearing the selected tag. Similarly, users may filter based on county of origin using the map in the bottom left corner of the screen. Note that users can also filter videos visually by simply scrolling and scanning the screen for an icon of interest.

Rather than a touch screen for user input, our system employs a series of ruggedized hard buttons surrounding the screen. The four red buttons beneath the screen control the system's selection rectangle, which moves among the selectable objects on the screen. Selectable items include videos, the assistant, each county on the map, the camera image, and the filter tabs. The nearby black button triggers the default action for the selected item (e.g. plays the selected video). The other two hard buttons are for requesting help from the assistant (top left), and for 'starting over', in case the user gets lost (top). This configuration of hard buttons has the added advantage that the bottom navigation buttons could be used to control a traditional mouse pointer, should the kiosk be used for a different system in the future.

4. NEXT STEPS

We have already begun construction of a functioning prototype of the design described above. The most important next step in this work will be further user evaluation and research using that prototype. Many questions remain unanswered as to the appropriateness of our design, and answering those questions will be especially difficult given the distance, both geographic and cultural, between Georgia Tech and Liberia.

Nonetheless, we look forward to the challenge. We feel that aside from the chief goal of Liberian reconciliation, this project is an excellent opportunity to investigate novel interaction techniques for illiterate users, and more generally, to explore the reception and impact of new media technology in a developing world context.

5. ACKNOWLEDGMENTS

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