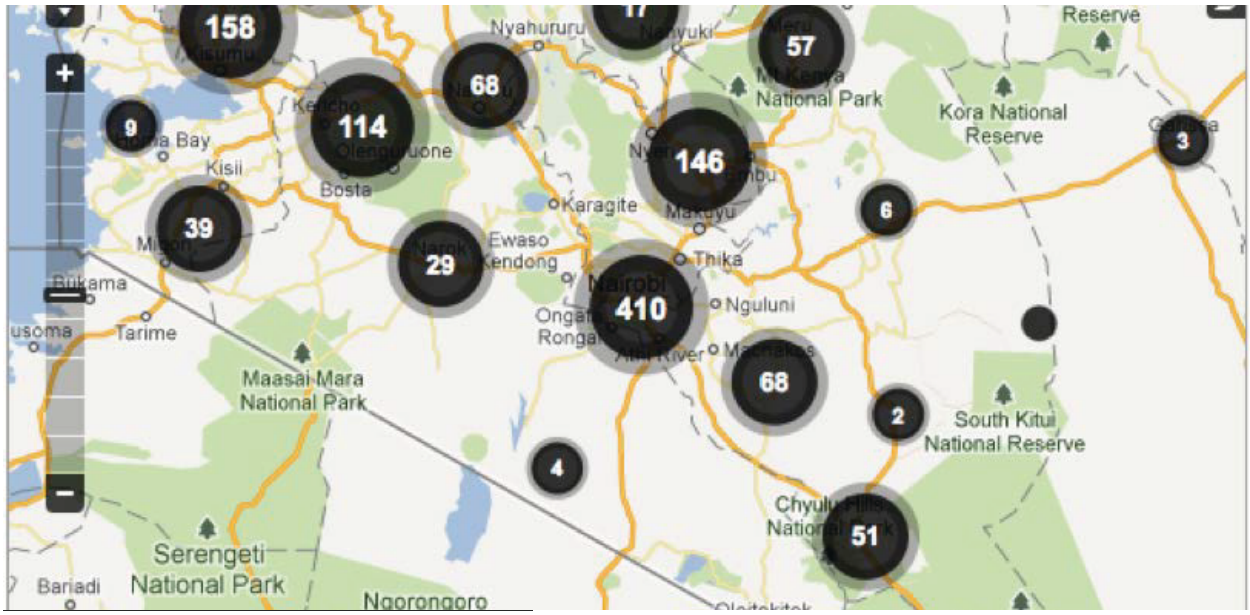
Ushahidi

Uchaguzi: A Case Study

Successes, Challenges, and New Ways Forward



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Uchaguzi: A Case Study

Executive Summary

In 2010, Ushahidi collaborated with partners to create the Uchaguzi-Kenya platform (an Ushahidi instance). It provided a channel for Kenyan citizens to communicate openly about the 2010 Kenyan referendum. The project was a success and opened up opportunities for future learning. The Harvard Humanitarian Initiative, Knight Foundation and Ushahidi came together to identify these successes and challenges. The outcomes of this learning and evaluation project aim to help plan for future Uchaguzi instances and share learning to the broader user community.

This Uchaguzi case study is presented in a format that follows an evaluation framework of three phases: assessment, implementation and output. It also approaches learning from the perspective of many non-technical efforts that go into a successful project. While the case study will focus on the 2010 Kenyan Referendum Uchaguzi experience it will also reference experiences in Tanzania.

Successes, Challenges & New Ways Forward

The great successes of the Uchaguzi-Kenya project were a commitment to a collective approach to problem solving and strong leadership that focused on overall goals. The flexibility and creative minds of the leadership team, volunteer groups and other partners created real-time work-arounds that helped achieve the project goals.

Recommended Next Steps

• ***Plan early*** One resounding challenge was aiming to achieve many objectives in such a short time period. Planning early, from 6-12 months prior to an election/referendum was strongly and widely recommended.

• ***Further build effective partnerships*** Defining and agreeing on roles, responsibilities and expectations will help partners implement a successful project.

• ***Develop Strategies (e.g., campaign, feedback to action, security and privacy)*** Strategies should aim to 1) improve the filtering and verifying large volumes of information 2) strengthen feedback loops and action by building an urgent response team, and 3) provide any necessary security & privacy plans for the project and its users.

• ***Use simulation*** Simulation exercises can help identify obstacles, test new technology, and improve workflows and communication approaches. These activities can better prepare people for an upcoming election/referendum day and provide a wealth of community building and learning opportunities.

Assesssment & Implementation Phase

Project Goal & Objectives

Partners complemented one another in ways that could not be achieved by one organization alone. But coming to a common agreement on objectives and expectations was challenging and led to misunderstandings.

Future projects should consider having early meetings to work together to define a common set of goals and objectives. Memorandums of Understanding may help facilitate this process.

Partnerships, Roles, & Responsibilities

Maintaining coordination and upholding commitments were challenging. Sometimes members did not meet expectations of other partners.

A workshop or meeting early in the project can establish a clear set of partner roles.

Job descriptions may ensure accountability and place the project and the partners in the best positions for success.

During the project there should be opportunities to "check in" (e.g., meetings) to improve communications and

set positive expectations for involved partners.

Civic education and media organizations should be considered as new partners.

Mapping & Information Visualization

Sometimes people were unable to access or actively look at the web maps. This was due not only to lack of high−speed bandwidth or Internet availability but also due to no knowing how to interact (e.g., zoom in/out & move) with the map.

During the early planning stage (assessment phase) a group/ task force should assess users' access to Internet and bandwidth and ability navigate online maps. This group should also identify opportunities to share paper maps if technology and web access is limited.

Information flows & Communication

The Uchaguzi platform added new communication pathways (e.g., SMS, twitter, email, web entries, etc.) to provide more efficient and near real−time access to referendum/election information.

Future projects should identify and consider integrating existing information flows to avoid duplication. For example, partnering with media organizations, such as radio stations, can have a broad reach with the community.

Strongly consider creating a communications strategy (including campaign & feedback loops) at the assessment/planning stage.

When using shortcode, consider coordinating with other organizations who may be using similar shortcodes.

Consider designing messaging campaigns together to minimize confusion with the public.

Consider a simulation exercise to test information flows, communication, technology, and volunteer teams.

Campaign Messaging

The project successfully used many different methods in their campaign to inform the public about the project.

Future efforts should create a campaign strategy and timeline that includes 1) establishing roles among partners responsible for shortcode and advertising 2) designing a message that not only informs the public about the project, but also informs the public about the project limitations.

Information, Security, & Privacy

Information security, privacy, and risks to people did not appear to be a major issue during this project, but future projects may face these very important risks and challenges.

A people, organization, data and system risk assessment should be performed for all projects, and a group strategy should be created. There is a quickly growing body of resources and working groups that can provide feedback, guidance and support for these activities.

Partners should keep an open dialogue with one another about changing perceptions of risks during the project. Create contingency plans that aim to minimize threats to the public, project, partners and system.

Technology & Instance Development

One of the greatest strengths of the technical portion of this project was that the technical team was part of the Ushahidi organization and intimately familiar with the Ushahidi platform.

Projects that are less familiar with Ushahidi/Crowdmap and/or the project location should strongly consider a technology assessment before beginning a project.

Consider planning more time for technical development, prioritization of customizations, and a "freeze point" where new customizations are stopped in order to fix bugs.

Volunteer Recruitment & Training

Volunteers provided invaluable support. Training both CRECO monitors and volunteers improved the quality and the speed of information flows.

Determining what constitutes an "actionable" or "high priority" message for the volunteers, and also defining the communication pathways to responders will set the stage for training volunteers on how to manage these incoming messages. One great resource available to future Uchaguzi projects is the lesson learned and training structure of the ***Standby Task Force****.*

Consider having a simulation event as a way to train monitors and volunteers months before the referendum/election day.

Contingency Plans

The project did not appear to have a contingency plan and when interviewing project members almost all expressed interest in having such a plan in the future.

The goals of these plans should be to

1. *Maintain basic infrastructure*
2. *Maintain communication between lead members*
3. *Provide a backup network of information processing for highly actionable information.*

Creating a contingency plan can include plans for back up servers, volunteer groups, communication channels for coordinators, and connections to responders.

Resources, Funding & Planning

The most common recommendation was to plan earlier – at least 6 months to 1 year prior to the event.

Creating a project plan and timeline will help organizations determine what key parts of the project should be monitored over time.

Aim to identify resources (funding and human resources) for campaign messaging, media volunteers, coordinators, and analysts (to identify "hot spots and trends") as early as possible.

Output Phase

Information Flows

550 CRECO election monitors, Uwiano, and the public contributed over 2,500 messages, which resulted in over 1500 reports. 149 reports resulted in “actions taken” primarily through the CRECO network.

Improvements in both the technology and people micro-tasking to filter incoming messages (e.g., color coding reports) would improve information processing, help identify priority messages, and facilitate communications to enable action.

The project should position “supernodes” (individuals trusted among many groups who are action oriented) where they can troubleshoot unanticipated challenges, and open up communication channels to allow timely action.

Prioritization, Actionable Messages & Feedback Loops

There was strong communication between the Uchaguzi-Kenya project manager, Ushahidi staff, CRECO and SODNET. This helped strengthen the multiple feedback loops for urgent and high priority messages. CRECO played a very important role in communicating with the IIEC. 149 reports resulted in “actions taken” but there was confusion around what constituted an actionable message and how best to prioritize messages as they flowed in.

During the implementation phase, partners should set criteria for action-oriented messages, and define priority levels so volunteers can appropriately and efficiently categorize reports.

Consider creating an urgent response team. The role of this team would be to focus on validating messages and tracking priority reports. They would also be responsible for ***monitoring levels of tension and conflict*** *and* ***communicating important information*** *to partner organizations in positions to respond.*

Conclusion

Overall the Uchaguzi-Kenya project was a success. The collective action of all those involved provided a communication channel for Kenyans to share information about the referendum. It also enabled some organizations to take immediate action based upon the information on the platform. The project was not without its challenges. This case study aims to help bring light to some of them and share the creative solutions of dedicated and passionate participants. But more importantly it aims to help future users learn from the past, to spark fruitful conversations among future Uchaguzi/Ushahidi/Crowdmap deployers and to help others plan future projects.

Methods & Analysis

The Uchaguzi Case study is presented in a format created to evaluate Ushahidi and Crowdmap projects and approaches evaluation from the perspective of the non-technical efforts that go into a successful project. This case study will focus on the 2010 Kenyan Referendum Uchaguzi experience, but it will also reference parts of the 2010 Uchaguzi Tanzanian election experience. Both projects used Ushahidi technology for citizens and election monitors to report incidents. Sections of this evaluation focus on topics such as partnerships, campaign messaging, and feedback loops.

Interest Phase ***Assessment***	Implementation Phase ***Process Analysis***	Output Phase ***Outcome Analysis***
Project goals/objectives/outcomes Visualization & mapping Partnership & audience Information & communication Campaign & messaging strategy Privacy & security Technology Resources & funding Planning & project timeline	Choosing Ushahidi vs. Crowdmap Roles & responsibilities Planning information flows Communication channels Planning categories Confirmation & verification Feedback loops Choosing the right map Your campaign & messaging: managing expectations Admin & volunteer teams Training	Evaluating goals/objectives Real-time evaluations Retrospective evaluations Checklists: 1. Partnerships 2. Technology 3. Campaign/messaging 4. Information flows 5. Action/feedback 6. Communications 7. Maps/visualization 8. Information security 9. Volunteers/teams 10. Other Action plans/implementation
See Toolbox #1 *Self-Assessment*	See Toolbox #2 *Implementation*	See Toolbox #3 *Information collection, and analysis, decision-making*

The interest phase discusses Uchaguzi project goals and objectives, partnerships, mapping and visualization. Experience from the perspective of roles and responsibilities, campaign messaging, and volunteer training are described in the implementation phase. Lastly, the output phase describes the information processing experience using the Ushahidi platform, and how this information was prioritized and translated into feedback and action.

This case study is an example of an evaluation that can be achieved using Toolbox 3.

Assessment Phase

Uchaguzi Project Goals, Objectives, and Expected Outcomes

"I think what an organization really first needs to think is, OK we're using Ushahidi, but why? And what are we going to get from it? What does it improve or speed up for us compared to what we were doing before?"

"I think really approaching this from a program design perspective would be helpful."

"For CRECO for instance, our goal is to prevent or to resolve electoral issues so it doesn't lead to an outbreak of violence. And kind of take that back and say, what are our underlying assumptions about theories of change, and so, how do these particular actions lead toward that."

The goal of Uchaguzi–Kenya was to provide a channel for Kenyan citizens to communicate openly about the 2010 Kenyan referendum using the Ushahidi platform. Although there was no unifying set of objectives, partners described the following:

- To provide a space for information sharing and collaboration
- To amplifying citizen voices
- To increase the efficiency of existing election monitoring system
- To create a mechanism through which citizens could actively monitor and report incidences related to the election process.

Organizations involved in Uchaguzi–Kenya collaborated and complemented each other. This led to a successful collaboration, but organizations often had different objectives contributing to challenges during the project. Uchaguzi was a new endeavor, not only in technology, but also in partnerships and information flows. Document reviews and interviews show that a set of agreed upon project outcomes was lacking and this was likely due to the fact that each organization was learning how to integrate their missions into the overall project.

"I think Ushahidi (for election monitoring) works well if you have a broad selection of organizations supporting you… But getting organizations to work together (with) mutual trust between them ...it takes time."

Partnerships

Before the referendum Uchaguzi partners met in Nairobi. Attendees included **CRECO, SODNET, Ushahidi, Uraia,** and **HIVOS.** Each group had unique assets and complementary strengths. For example CRECO had previous election monitoring experiences and consists of a large trusted network of monitors. Ushahidi served as the core technical partner for the project, providing developers and convening volunteers. The collective action among all five organizations was a success. Despite many challenges and areas for future improvements a single organization would not have succeeded alone because no one group had all the necessary skills and resources. According to interviewees, maintaining coordination and partner commitments was challenging and some people felt that the commitments of others did not meet their expectations.

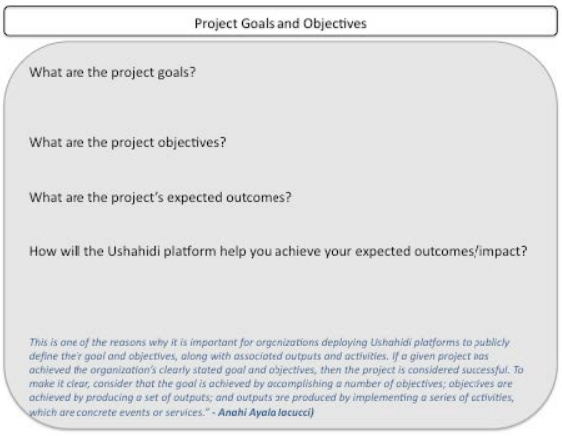
"One thing I took away from the experience was understanding that there needs to be better communication. Recognizing the different languages that tech and non-tech people speak, and that we can't always take for granted what is common knowledge and what is not."

Communication between partners was essential during the project. Initial partnership meetings allowed groups to learn about each other's aspirations. One lesson learned by project manager Jessica Heinzelman was understanding that different groups communicate in different ways.

Interviewees and evaluation reports recommend establishing a clear set of roles and responsibilities early in the project. Moderated discussions should seek to have organizations understand the perceived risks and benefits of partnerships throughout the entire project. Documents that reflect these discussions should be created and could also outline partner roles and responsibilities.

Some participants recommended using memoranda of understanding (MOUs) as a way to improve partnership buy-in and commitment throughout the project cycle. Specifically, some believe that MOUs can provide clarity on expectations and improve communications.

"An MoU with all involved partners at the beginning will help to better map out what the objectives are in using Uchaguzi, reduce moments of friction during the process and enable better tracking of whether their capacity to effectively use the platform is indeed enhanced. This includes defining what the information will be used for by different organizations, what the platform can and cannot do for them, and what their own commitments need to be to the platform and other stakeholders."



Many interviewees recommended partnerships with civic education and media organizations. They believe that these organizations and consortia have the potential to broadly disseminate campaign messaging and could improve the implementation and outcomes of a future Uchaguzi deployment. Future Uchaguzi deployments should bring partners together in a workshop or meeting during the assessment phase.

New partners can be a part of this initial meeting to learn and decide if a partnership is possible. The meeting should aim to first expose any differing perspectives followed by a collegial process to agree on common goals and objectives. This process will improve collaboration and coordination because partners will approach challenges from common set of goals and objectives. The project should consider using MOUs to strengthen partnerships. Toolbox 1, slides 8–9 can be used as a guide for this activity.

Mapping & Visualization

The Uchaguzi project mapped individual reports onto the platform to show the report type and location on a country map during the referendum period. The opportunity to share information on a map with a broader community was a common interest among the partners. Some partners believed that the map would have the ability to deter specific actions, but it was unclear which groups (e.g., media, local communities, election organizations) were the primary target of the web–based maps and how viewing it would achieve some of the project's objectives.

Many partners also assumed that all citizens were able to access maps from the web, but soon realized that this was not always true. Some communities were unable to access the web and others were able to see the Uchaguzi website but were not familiar with how to navigate the maps to see reports. Toolbox 1, slide 10, can be used in the future to assess mapping needs.

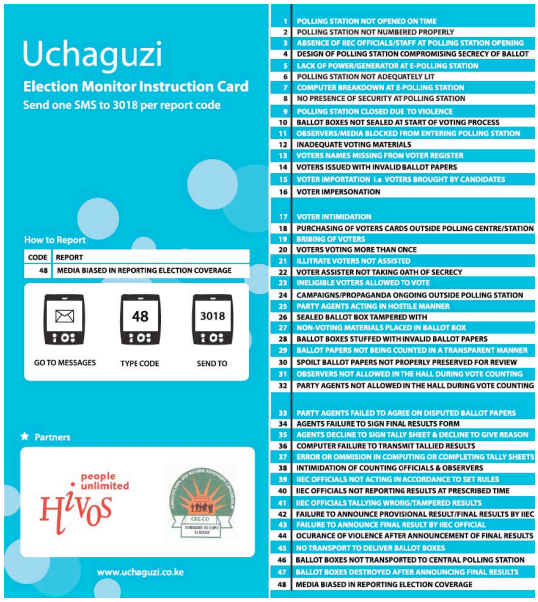
"... from digital mapping, it was very easy for us and for Uchaguzi to liberalize the electoral process. These issues would be easily uploaded and then seen, not only here, but across the world."

"And one of the things that I appreciated...was the fact that it ... was a deterrence, people could not do things because it would be discovered."

Information / Communication

The Uchaguzi–Kenya project planned to collect referendum information from CRECO election monitors and the "crowd" or public. Crowdsourced information was unstructured and information from CRECO monitors was structured using checklists and a code card. The plan was to use election–monitoring information to verify crowd reports.

The Uchaguzi platform added new communication pathways (e.g., SMS, twitter, email, web entries, etc.) to provide more efficient and near real–time access to election information improving situational awareness. SMS was the major communication pathway for incoming information. Campaign planners used radio, television advertisements, tweets, and word of mouth to inform the public about the Uchaguzi project. Plans on how to communicate near real–time information back to the crowd and other stakeholders are less clear from this evaluation and the review of other evaluation reports. At the assessment phase, groups should think about what information already exists and how it is already being communicated. Existing information can flow through new communication pathways or new information may be best communicated along traditional communication lines.



Partners should determine not only what new or existing information is needed to enter into the Ushahidi platform, but also discuss communication strategies. Partnering with media organizations, such as radio stations, can have a broad reach with the community. These strategies can include campaigns that inform communities about the project purpose, how it will happen, and open up discussions about how information can best be shared with the public, media and other interested groups. *(Toolbox 1, slides 13–14)*

Uchaguzi–Tanzania participants recommend transforming the web–based map into paper maps. This would help local partners share the information with communities that are unable to access the map in its online format. Sharing maps in a newspaper immediately after the election would also broaden the reach of Uchaguzi efforts.

Security & Privacy

"The ability to create questionnaires gets people to start thinking about the security that I think needs to be a standard set of questions that people ask for in any installation at all."

While the issues of information security, privacy and the possibility of retribution for sharing information was not a major issue in the Uchaguzi–Kenya project; it may play a very large role in other election monitoring projects that use Ushahidi or Crowdmap. Risks to people systems and organizations are constantly evolving approaches to security privacy will need to be regularly evaluated. A security and privacy review should begin with:

- A discussion of potential risks to the crowd and organizations if they use the platform

- Plans on how to keep technology hardware (e.g., servers) safe and secure
- Plans for how volunteers and others should be trained to keep information private and secure, if necessary
- A contingency plan for security and privacy related events.

Two resources to help think about and plan a data protection, security and privacy strategy are particularly notable. “Securing Crisis Maps”, created by Rob Baker and George Chamales is a helpful infographic that shows different areas of information, security and privacy risks. A blogpost by Anahi Ayala Iacucci, “Crisis Mapping and Cybersecurity” describes one approach to addressing these issues. Questions from Toolbox 1, Slide 16 “ICT, Privacy& Security” can also be used as a guide to think about these issues in election monitoring projects.

Technology

Ushahidi developed the platform and first used it during the 2007 Kenyan post−election violence. Ushahidi staff and much of their volunteer community had prior experience with developing software, creating customizations and mapping information onto the platform.

In 2010, 62% of the Kenyans were mobile service subscribers, texting approximately 10 times per month. Although voice and SMS may be widely used, the Communication Commission of Kenya statistical report does not describe the geospatial distribution of mobile use throughout the country. The geographical distribution of SMS and mobile phone use may influence how election information flows throughout the country during an election or referendum. As of late 2010, only 10.2 % of the population had access to the Internet. This statistic neither provides insight into how often users have access to the internet nor the degree of bandwidth that is reliably available, both elements that provide real−time, access to view Uchaguzi maps and report information.

It is recommended that future Uchaguzi projects in other regions consider a technology assessment (Toolbox 1, slide 17) before beginning a project to understand and determine the internal technology needs and the capacity of their partners and public. This is also strongly recommended to organizations that seek to use a similar model.

Resources, Funding, Planning, and Project Timeline

It can be challenging to anticipate the resources and necessary funding to launch a project with new partners, technology and information flows. HIVOS and Twaweza supported the Uchaguzi−Kenya project along with a large community of volunteers. Many people felt that more resources would help future Uchaguzi projects and recommended identifying these needs earlier in the project cycle. Resources for campaign messaging, media volunteers, coordinators, and analysts (to identify “hot spots and trends”) were some suggestions. One of the most common recommendations regarding resources by those interviewed was more time for planning and training.

Almost all interviewees recommend beginning the planning phase anywhere from 6 months to 1 year prior to the referendum. Creating a project plan and timeline will help organizations determine what key parts of the project should be monitored over time. Interviewees mentioned the need to plan interval partner meetings, campaign and messaging timelines, technology and customization plans, volunteer or data team training timelines and plans to establish new or traditional feedback loops to communities. A review of project timelines of the other election monitoring experiences using the Ushahidi platform (Zambia, Nigeria, Ethiopia, Uganda, etc.) will also inform future projects and help set the stage for the implementation phase.

Implementation Phase

Roles & Responsibilities

Implementation Phase ***Process Analysis***
Choosing Ushahidi vs. Crowdmap Roles & responsibilities Planning information flows Communication channels Planning categories Confirmation & verification Feedback loops Choosing the right map Your campaign & messaging: managing expectations Admin & volunteer teams Training
See Toolbox #2 *Implementation*

The project included campaigns, a SMS shortcode, election monitors, and observers and multi-site information processing centers. During the implementation phase individuals and partners took on roles and responsibilities that resulted in a successful collection of information during the referendum period. Partners created campaigns, which provided different communication channels to spread the word. Overall, people wished for more defined roles and responsibilities at the partner and individual level. Another evaluation report referenced the need to, *"Establish partner organization roles and responsibilities and integrate them into an overarching project plan."* Jessica Heinzelman described some of the challenges that she faced as project manager and from her experiences recommends a more structured way to communicate roles and responsibilities for future Uchaguzi deployments.

Job descriptions would help ensure accountability and place the project and the partners in the best positions for success. If people were more aware of roles and responsibilities they would be able to reach out to one another for assistance and collaboration.

Implementation Toolbox 2, "Understanding Roles and Responsibilities" and "Planning Roles and Responsibilities", can be used in future Uchaguzi projects.

"The first thing I would do differently is start planning much earlier."

"If we had had an extra month of optimizations, trials, and advanced training, I think we would have been much more prepared."

Information & Communications Flows

Approximately 550 CRECO monitors planned to send information into the platform and an unknown number of crowd messages from the public were expected to come into the platform as well. The campaign asked them to send in information through the shortcode 3018.The monitors were trained to use a "how-to" code card with 48 predefined report types to be sent via SMS to Uchaguzi. The numerical codes would then be translated into the corresponding text before the report was posted on the site.

There was another platform called, Uwiano, which also used shortcode (6397) to allow citizens to report violent incidents or tension around the referendum period. The Uwiano platform was a collaboration between PeaceNet, UNDP and IIEC. PeaceNet eventually contributed a large flow of information during the referendum period but were less involved in the implementation phases. Similar shortcodes caused some confusion among the public. One way to mitigate confusion would be to work with other organizations with similar shortcodes to frame campaign messaging. In addition, if identified early, a more formal partnership could be created potentially using one shortcode, but is not without its challenges.

”People thought that our shortcode was the same as theirs (3018)... and they were talking about similar things ... our publicity started like 2 or 3 days before the referendum. Theirs was also free, and ours was five Shillings to submit. .... there was a bit of (public) confusion.”

Once the information arrived into the Uchaguzi platform, different volunteer teams and coordinators at the iHub and CRECO offices categorized and mapped the information onto the public website. The plan was to have two separate flows of information: one from the crowd and another from the monitors. It was hoped that the crowd information would be verified by monitors, if necessary. Meeting during the implementation phase with all key partners may help identify obstacles and work through challenges. During these sessions, partners could create an information flow diagram that looks at all stages of communication and information flows. (see Toolbox 2, slides 10−13)

Another opportunity for future Uchaguzi projects is to carry out a simulation of the election or referendum period. With existing datasets from prior projects, a simulation exercise could help a project work out bugs and unrecognized problems in workflows and communications. While the time and resources needed to integrate a simulation experience into the project requires planning at an early stage, this learning and adaptive exercise will likely expose many glitches that can be addressed prior to the actual election or referendum period.

Uchaguzi Instance Development

“It was easy to handle all the parts because you have a large developer community here.”

Technology development for the Uchazugi−Kenya project began in mid−July. One of the greatest strengths of the technical portion of this project was that the technical team was part of the Ushahidi organization and intimately familiar with the Ushahidi platform. The servers were located in the iHub where many Ushahidi staff and volunteers work. There is also a large technology development community in Kenya. The iHub provided a very valuable innovation space for “hackathons” and “meetups” where developers could meet and work on the technical needs of the Uchaguzi−Kenya project.

The lead technical coordinator Linda Kamau had previous experience using the Ushahidi platform for election monitoring in Burundi and brought her own lessons learned to the Uchaguzi−Kenya project.

One of the major challenges from the technical team was the plan to use Huduma, which was a platform in development. During the implementation phase, project plans stemmed from the assumption that the Huduma platform would be complete and functional before the referendum period. With this in mind, volunteer training and many other project activities hinged on this stage of technical development. The decision to not proceed with Huduma occurred three weeks before the referendum.

Learning from the Uchaguzi−Kenya team’s challenges with trying to create a new platform in a short time frame, many have recommended to consider planning more time for technical development, prioritization of customizations, and a “freeze point” where new customization are stopped in order to fix bugs.

Choosing the Maps

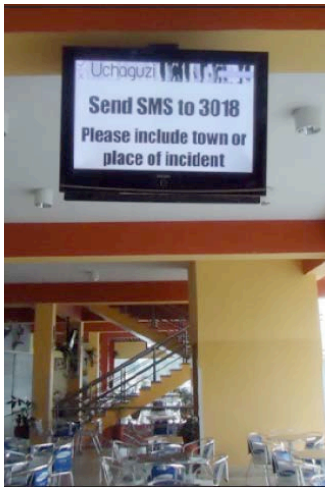
For the Uchaguzi project, the full screen map feature was integrated into the platform. Due to the limitations of this evaluation, CRECO monitors, and the general public were not interviewed and their experiences using the website, and utility of the maps from their perspectives are not known.

Uchaguzi-Tanzania – Choosing the Map

Not all individuals had adequate bandwidth to easily upload the maps and there were also anecdotes about individuals who sent information into the Uchaguzi-Tanzania instance who did not know how to drag, magnify, or perform other Google map functions on the Uchaguzi-Tanzania map.

There was frustration and an initial perception that information was not being posted on the site. From these experiences, some have recommended finding a way to create a "light" version to enable low bandwidth users access to the information and map.

"It would be very interesting if Ushahidi could design a light version...[for some] it takes 5 minutes to upload and the dots come 3 minutes later. And if you don't know the dots are coming, you're not going to wait for them."



Campaign & Messaging

The campaign informed communities about the Uchaguzi project and how to send in messages via the 3081 shortcode. It was publicized two months before the referendum day, and partners also launched individual campaigns. There were also advertisements in the Daily Nation, The Standard, Facebook messages, television messages, and radio interviews.

Despite the many different modalities used to communicate the Uchaguzi project to the public, partners felt that the popularization took longer than they had expected. One contributing factor was the cost of establishing the shortcode. Earlier communications could also help establish expectations about the benefits and limitation of the platform. Working with the public and civil society organization to use traditional communications pathways could also get the word out.

"I remembered technical aspects in Burundi and those are some of the things used during the Uchaguzi brainstorming session to come up with the successful plug-ins. Split up the different screen views for monitor & crowd reports was one of things that came up which we actually implemented for Uchaguzi."

"Our message did not tell people what we were going to do with the information."

"The call was made to abandon Huduma because it wouldn't be ready on time and focus on customizing the existing platform. And I think that was a place where we could have made a different decision and had a really big impact."

With a growing body of Uchaguzi and other election monitoring experiences using the Ushahidi and Crowdmap platforms, creating a campaign strategy and timeline would benefit future projects. Setting expectations among partners responsible for establishing shortcode while mobilizing different campaign options (e.g., radio, television, advertisements) should be planned early in the implementation phase. Workshop sessions could also help partners create and test campaign messages. This should include messages about what information to send in via shortcode, but also messages on what the public can expect the project to do for them and their communities. For future projects in insecure environments, more time should be planned to work closely with partners on crafting messages to the public in order to ensure safety and privacy. Toolbox 2, Slides 20-23, can help the campaign design and messaging process.

Volunteer Recruitment & Training

The recruitment and training of volunteers and election monitors was a success. Linda Kamau, the project technical lead, anticipated the need for a large number of developers and helped recruit volunteers from the Nairobi development community. Sisi ni Amani, a NGO was also asked to help recruit and train information processing and mapping volunteers. CRECO election monitors were trained on how to use the code cards, which enable a more structured way of sending in information.

Those interviewed in this evaluation brought up the following challenges:

- Determining the number of needed volunteers
- Training people with novice computer skills
- Anticipating translation needs
- Training around the identification and actions for high priority messages.

The Uchaguzi–Tanzania team had some difficulties estimating the number of necessary volunteers. During the election, the number of messages exceeded the volunteer capacity. One of the contributing factors was the time it took for people to translate messages from different dialects, and their ease in interfacing with computers. For future Uchaguzi projects the implementation phase should also try to anticipate SMS messages in different languages or dialects. If this exists, more planning may be necessary to recruit, organize and coordinate volunteers with different language capabilities. In addition, during the technology assessment phase, if the volunteer community has introductory computer and web skills, more training time and exercises will be necessary to prepare volunteers for large volumes of information processing.

"There must always be a back up and expectations of users need to be clearly adapted to this reality. This will not only help avoid tension between partners, but also reduce the risk of activities coming to a standstill without ICT."

An information flow diagram could also inform volunteers of their micro–tasking roles within the larger project. Using a diagram, volunteer teams may find it easier to communicate needs and questions to the appropriate coordinators. Also, coming to an agreement among the team members of what constitutes an "actionable" message for the volunteers, and also defining the communication pathways to responders will set the stage for training volunteers on how to manage these types of incoming messages. One great resource available to future Uchaguzi project is the lesson learned and training structure of the Standby Task Force.

There were two locations where volunteers processed information: the iHub and CRECO offices. These two groups, one from the iHub community and the other from the CRECO community were complementary to one another and the shared spaces allowed volunteers the opportunity to communicate with one another. It was an energizing environment. Although there were no security events, having multiple locations and also remote volunteers as backup support will mitigate some security concerns. Other volunteers worked remotely from their homes and were assisted via a Skype channel set up for the project. Depending on the security context, this may be another strategy for mitigating concerns.

"There may be instances in an election monitoring where it would be strategic to have pods located in multiple places if there are security concerns."

Contingency Planning

The volunteer iHub team functioned as a backup volunteer group for the CRECO team. Communication lines between CRECO, the IIEC and PeaceNet were available to facilitate information exchange for high priority events. The project did not appear to have a formal

contingency plan and when interviewing project members almost all expressed interest in having such a plan for future projects. The following are recommendations on how to think about a contingency plan.

- In the setting of violence and security events, the contingency plan should consider communicating information to the media, and also feeding information back to peace activities if possible.
- Consider back-up volunteers from the Diaspora or others who can process information remotely, and plan for the management of this community as well. Recognize that verification of information by these communities can be a challenge.
- Consider having a backup server at another location so that operations can continue.
- Consider having rotating volunteer teams to prevent volunteer fatigue.

Output Phase

This following section describes the Uchaguzi-Kenya referendum activities as well as the Uchaguzi-Tanzania election (grey boxes). It includes how information flowed into and out of the Uchaguzi platform. It also discusses feedback loops and communications between partners and the broader community.

2010 Kenyan Referendum Day

"I think we were very communicative about the issues. At that moment we were able to enjoy each other as a community and know that we were all there for a purpose and working towards a common goal. Which really made it a positive experience for everyone, regardless of the challenges."

One of the greatest successes of the Uchaguzi-Kenya project was the collective approach to problem solving with leadership support that focused on the overall goals. The flexibility and creative minds of the leadership team and volunteer groups created real-time work-arounds that helped the project achieve its goals for all partners. We just made sure the information was getting in there instead of making it perfect or making it so that we could dissect it later. Having that ability to say, okay, we're going to forget about this now, this is not the most important priority and we're just going to make it work.

Information Flows

In Kenya, 550 election monitors, stationed around the country, began sending in SMS messages into the CRECO offices where 10-11 staff began processing and mapping information. Initially some election monitors requested additional guidance on how to send SMS messages. Volunteers provided guidance via telephone in the morning and by mid-day, the monitors were comfortable sending in information. Uwiano information began flowing in representing information gathered from the public weeks prior to the referendum date but individual messages were not time stamped. Information from the crowd also starting flowing in.

One of the challenges during the referendum was filtering messages. Although there had been plans to separate crowd and monitor messages, this was not technically possible at the time of the project. Uwiano message also were difficult to filter after the messages were merged into the system. This resulted in untagged information on the Uchaguzi platform making retrospective analysis of information flows difficult.

For future Uchaguzi instances, one recommendation that resonated from interviewees is to improve the filtering system for incoming messages. Color coding crowd and monitor reports

would help microtasking and processing of information as it comes in. Others suggested coding information as pre-event, event and post-event as they believed these types of information have different purposes.

2010 Tanzanian Election – Information Overload

The Tanzania-Uchaguzi experience faced information overload challenges. There were thirty times more trusted sources who sent in coded information via SMS and the team faced technical challenges as well. The instance was not set up to accommodate the large number of pre-defined trusted sources in the system. During the election day, when numbers arrived via text message volunteers spent time calling people back to ensure that the numbers came from trusted sources. Although this provided a high level of verification, the number of messages, coupled with the more novice computer skills of volunteers created an information-processing overload, limiting the speed of mapped information during the election.

Uchaguzi-Kenya Platform Statistics

Total messages received	2,525
Referendum day messages	1,778
Uwiano messages	1,573
# reports	1,523
# total Uchaguzi messages	2,492
SMS:	1,900
Twitter:	571
Email:	21
% verified reports	51%
# of "Actionable" reports	1,515
# of "Action Taken" reports	149
Top Categories: Everything Fine (49%) Tensions (17%) Peace Efforts (6%)	

Some people felt that the crowd reports included less information that could be mapped, including "spam" messages and other messages with no geographic locations. Some members felt that had the campaign commenced earlier this may have improved the quality of the crowd messages.

"In Tanzania we were struggling with 4,000 messages."

Communication

There were many pathways of communication during the referendum. At the iHub, volunteers communicated with coordinators troubleshooting platform glitches, and clarifying volunteer questions on how to process and map information. Erik Hersman (Ushahidi) and Philip Thigo (SODNET) sat side-by-side communicating information between Ushahidi and SODNET. Kawive from CRECO traveled to and from the iHub maintaining communications between the two information processing centers. He also maintained communications with IIEC staff. Some members felt that having two separate locations of information processing created a "silo." Despite the intent to compare crowd and monitor messages during the referendum it was not possible to filter messages from election monitors and the crowd. This likely contributed to the feeling that the groups were silo'd.

"It will be good to build some easy steps by which you can actually separate your reports between your actionable ones and your non-actionable ones"

Prioritization and Actionable Messages

(Uwiano information was) imported it into Google spreadsheets. People went through the data to try to parse out the important ones.

Another challenge was identifying action or priority messages. Confusion likely stemmed from the lack of consensus around the definition of "priority" and "actionable" from a project level, volunteer training, and limitations in platform filtering functions. Despite these challenges, volunteers and leaders in the project

worked together to create work-arounds to achieve the project goals. Volunteers transferred Uwiano messages to Google Docs spreadsheets to identify high priority messages that required follow up and action.

In the implementation phase bringing partners together to determine what constitutes feasible action-oriented messages will help define what "actionable" and "priority" means for the project. Volunteers can then be trained on how to identify and filter "actionable" or "high priority" messages. Developing action and priority buttons on the instance would also improve microtasking efforts to filter and allow key decision-maker to respond with the appropriate partners.

Many recommendations have already been incorporated into the new Ushahidi platform. Developer George Chamales has built and tested new microtasking platforms that may address these challenges for future Uchaguzi projects.

Feedback Loops & Action

"We tried to have direct links to the electoral commission. It's important, once you have observed violence, to do something about it"

"If we had a report around an area where we knew a CRECO monitor was, we had a channel to them."

Strong communications between the Uchaguzi-Kenya project manager, Ushahidi staff, CRECO and SODNET helped strengthen the feedback loops for urgent and high priority messages. There were multiple feedback loops including those from CRECO to the IIEC. For example, CRECO monitors identified posters with incorrect voting colors and this information was sent into the Uchaguzi platform, verified, by the trusted CRECO network with digital images, which prompted the removal of the posters with the assistance of the IIEC. Sharing information with the local and international media was a major way of sharing information with the broader community. The platform information was aired on prime-time Kenyan television for two days.

"If you're going to send in messages that people are going to classify as urgent, there should be a specific reply says 'thank you for your message, we're responding to it.'"

For future projects, people recommended an urgent response team who would be able to track priority messages and monitor levels of tension and conflict. The team's role would be to communicate important information to partner organizations in positions to respond. Learning from the Uchaguzi-Kenya experience, trusted individuals among organizations (supernodes) should be placed in positions to help facilitate coordination and sharing of information between Uchaguzi and responding actors. While information feedback and action loops should occur among the project partners, parallel feedback loops to communities should occur as well. Printing reports and sharing them in community meeting or posting them on public walls is one suggested way of sharing. Individual feedback to senders can also occur with reply SMS message to sender acknowledging the receipt of high priority message. Auto-replies for high-priority messages may increase expectations for timely response and these communications should be tightly linked to action.

"Engage all partners in developing a feedback loop to citizens: how do you make sure citizens realize the power of such an ICT platform? And how does each organization contribute its own specific merits to this process?"

Conclusion

Overall the Uchaguzi Kenya project was a success. The collective action of all those involved provided a communication channel for Kenyans to share information about the referendum. It

also enabled some organizations to take immediate action based upon the information received. The project was not without its challenges. This case study aims to help bring light to some of them and share the creative solutions of dedicated and passionate participants. But more importantly it aims to help future user learn from the past, to spark fruitful conversations among future Uchaguzi deployers and help others plan future projects.

Thank you

The content, analysis, and presentation of this case study could not have been achieved without the honest and creative insights of many interviewees during the project. Feedback from the Ushahidi community of users, Harvard Humanitarian Initiative staff, experts in the field of crisis mapping and crowdsourcing provided invaluable feedback. The Harvard Humanitarian Initiative hopes that this collaborative learning effort will contribute to not only evolving growth of Ushahidi as an organization, but also to the next steps that people, groups and organizations will take using their own Ushahidid/Crowdmap platforms in the future.

With gratitude,

Jennifer Chan

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