Call to Action: Simplifying Voice Tree Design

Rodrigo Davies
MIT Center for Civic Media
MIT Media Lab, Ames Street
Cambridge, MA 02139
+1 617-299-9831
rodrigod@mit.edu

Sasha Costanza-Chock
MIT Center for Civic Media
MIT Media Lab, Ames Street
Cambridge, MA 02139
+1 617-299-9831
schock@mit.edu

ABSTRACT
Call to Action is an open-source web platform for creating telephone-based services such as hotlines, voice petitions and phone blogging platforms being developed at MIT’s Center for Civic Media. It seeks to simplify the design and deployment process for non-technical users, such as community groups. This poster will illustrate the platform’s GUI, methodology, typical use cases and future development prospects.

Categories and Subject Descriptors
H.5.2 [User Interfaces]: User-centered design

Keywords
Voice trees, ICT4D

PROJECT DESCRIPTION
Call to Action seeks to simplify the often-complex process of designing voice trees and provide a hosted platform for the deployment of these services that meets the needs of community groups and individuals who do not have technical support or expertise.

Development of Call to Action began following the successful deployment of New Day New Standard, a telephone hotline service the team developed with REV-and Domestic Workers United to inform domestic workers and their employers in New York of changes in legislation affecting them.

The success of NDNS led to inquiries from other potential user groups. It was clear that a wide range of community groups could benefit from developing phone-based information services of their own. Since NDNS was created in VoIP Drupal scripting language, though, users without that specific programming experience would need to invest a significant amount of resources to create a similar service. Secondly, our research found that most user communities find creating a voice tree to be a conceptually challenging exercise. We hope to simplify the process with a visually oriented system that mirrors a paper-and-pen workshop method the team uses with community partners.

The platform provides a drag-and-drop graphical interface that enables the user to plan the flow of calls, record custom audio and make use of all the input and output features offered by a regular telephone. The service requires no software programming experience, and users can build a service in under half an hour.

Users build their services by arranging pre-defined elements onto a canvas and linking these elements with ties. Call to Action was designed with the intention of supporting all possible permutations of a call flow using the fewest possible number of element types. The platform uses seven: ‘Welcome Message’ (plays audio but has no input node); ‘Audio’ (plays audio); ‘Menu’ (plays an audio prompt and accepts a user key press); ‘Action’ (sends a query to the database); ‘Recording (plays an audio prompt and accepts user audio recording); ‘Redirect’ (re-routes the call to another telephone number); Hang Up (hangs up the call and has no output node). All elements, except the ‘Welcome Message’ and ‘Hang Up’, have input and output nodes that must be connected to other elements. Elements are distinguished by color and shapes to help users to quickly identify the elements they need.

Commonly used sequences of elements (such as a caller recording a message to be submitted to the service) are given as grouped templates or ‘blocks’ that can be imported onto the canvas. After completing a design, the user can save their work for publishing, and retain the files for future editing. As well as facilitating the easy creation of telephone services, the platform gives users advice on how to record effective voice prompts and estimates the call length at each stage of the call flow. This allows creators to optimize their services to suit caller needs.

The platform uses Javascript to handle the manipulation of elements on the canvas, including the jsPlumb library. The completed platform will output a representation of a user’s voice tree design as JSON and XML files that can be used with VoIP applications.

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frameworks and APIs such as VoIP Drupal, Asterisk, Twilio and Tropo. The team is also considering developing an end-to-end platform that allows users to save and operate their completed services as nodes on a Drupal instance hosted by the Center for Civic Media.

To date we have released an alpha version of the platform's design interface, and are currently developing the scripting and hosting functions the platform will use. The alpha version is hosted at calltoaction.mit.edu. The current tool has been used to support in-person telephone service design workshops with community groups. The finished platform will be a standalone service that groups or individuals can use unassisted.