

CIVIC ENGAGEMENT AND INTELLIGENCE

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Abstract

The problem statement of the group project for Human Computer Interaction seeks to explore the application of HCI concepts on a real-life problem. The paper describes the iterative design and development methodology of a civic engagement application. The paper also describes the problems the system addresses, the design and implementation of the system, and an overview on the feedback and evaluation of the system. This paper concludes with a study on the potential usability of a civic awareness app with a positive scope for the future.

Introduction

Throughout this project, the key aspect was understanding humans and identifying their needs by conducting research on certain target population to gain key discovery insights. This then formed as a basis to formulate our problem statement and propose a potential solution through user research, proof of concept, empirical evaluation, and prototype development. The purpose of the experiment was to think about methods to design for diversity and inclusion. This paper describes an experience using user research and personas in the context of the design and development of a system aimed at the voting population. The paper reports the progress made on understanding the final users' needs and characteristics that will support the design of the approach.

Problem

With the current election system, users normally rely upon internet-based resources to research candidate platforms and all other information that is required up until the polling date. Most citizens are not aware of the hierarchy behind their pledges for candidates or their parties. Users relying on social media to gain access to campaign related information are usually disheartened or subject to targeted advertising

that applies a sort of bias in their decision-making. Most official government website landing pages tend to overwhelm users, being slightly tricky to get the exact information that is being looked for. This information is usually only found after a series of endless clicks without the user gaining much. Hence, we would like to propose that an interactive civic engagement app providing information on candidates, parties, elections, communities, etc. would be very effective.

Interview

Personal Interview Candidate

My candidate for interview was a young male, age 26 years. A citizen of the United States of America and currently residing outside of his electoral voting constituency (resides in a different state) and a recent graduate. He is part of the target population for the app as a citizen who is legally allowed to vote. I received key insights on the physical voting procedure as well as knowledge on how participants gained information on candidates. A large portion of his friends and relatives did take part in various elections regularly. His knowledge on candidacy and parties mainly revolved around keeping track of debates and the news from television and social media. He expressed his enthusiasm at the idea of a consolidated solution that helps users get more insight into the electoral system as well as being hopeful that such an idea may lead to an increase in voter turnout as well.

Group Interview Candidate

Other candidates interviewed include Chelsea, who votes and uses internet-based resources to research candidate platforms, so a civic engagement app providing information on candidates would be relevant to her. She uses Maine.gov most often but still struggles to find any information on the candidates there. A friend referred her to the League of Women Voters website which provides some helpful information. She relies heavily on that site along with

individually googling the candidates as a prologue to her casting her vote. Her decision making usually takes no longer than a week, researching in about three sittings and discussing with her husband. Her frustration is evident when she states that it takes a long time to find even the most basic information that should otherwise be much easier to find.

Persona

Frequent User

Frequent users are those who would display a high motivation to be involved with using this app. The design considerations behind frequent users revolve around consistency and having an agreeable flow of information. Some assumptions made were that frequent users would like a dedicated news feed to include the latest news, election updates and other relevant information. This information must be easily accessible with option of shortcuts to view repeated content.

Infrequent User

Infrequent users are those who would not be inclined to use this application as frequently due to their own preferences. A general overview of the main features of this app would be sufficient for a user that cannot handle as much cognitive load. This user's screen time would not be as significant.

Mandatory User

A mandatory user for a civic engagement app could be a person with a technical background. They would frequent the application for its development and error handling, if any. Assumptions made and designed for include that a mandatory user would most likely be an administrator with high privileges. For E.g. : Adding/Removing Candidate information, display pictures, description, etc.

Discretionary User

These users tend not to exhibit much of an interest or motivation in using this system. They would much rather prefer holding onto their beliefs and going with traditional methods of gaining their knowledge. Elderly people usually struggle with their motor and cognitive levels and using an app could prove to be well outside their capabilities.

Novice User

A novice user would more likely struggle to gain any sort of significant information from this venture as they may not be utilizing this app for its intended use case. They could also find it hard due to a restricted vocabulary or some form of disability that would hamper them from understanding the flow of information within the app.

Expert User

These users tend to learn how to interact with the app flawlessly. They are keen to utilize the system and gain the most out of it. Experts would know how to maneuver through the intricacies of the app and help provide feedback to the developers. Assumptions include rapid performance, quick loading times, less cognitive load on users and feedback.

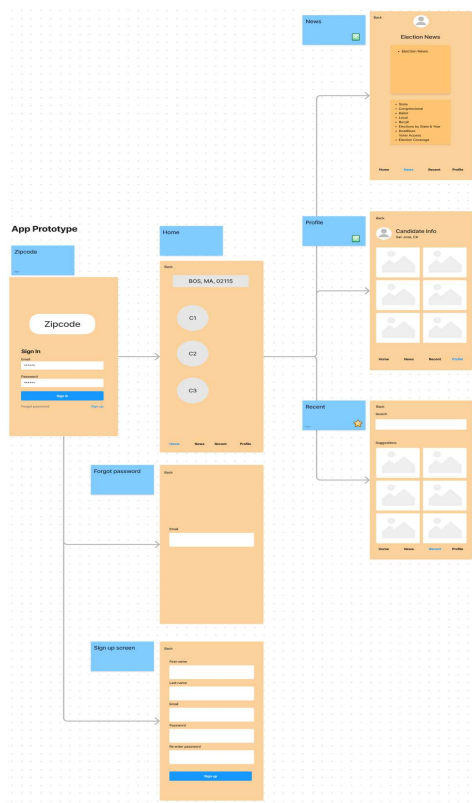
Experimental Design

Methods that could be implemented are interviews, concept testing, customer feedback and email surveys. The study aims to have two broad stages. The first will be an interview stage, during which the researchers will conduct phone or in-person interviews with voters to test initial assumptions. The second stage will be a survey stage in which the researchers will send an email survey to large groups of voters requesting customer feedback of existing resources and concept testing the idea of a civic engagement app. Hypothesis while designing the empirical experiment were as follows :

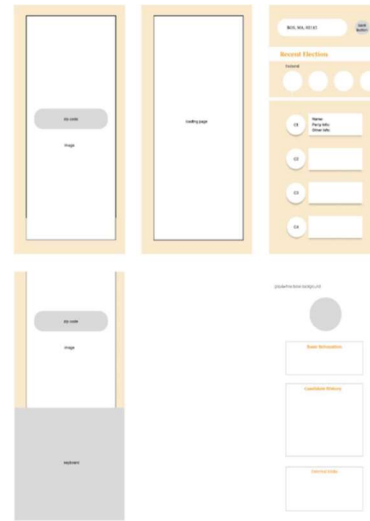
1. Dividing information into digestible chunks improves retention of such information
2. Users retain information about candidates better when there are photos associated with each

Selective sampling was primarily used as the target demographic is very wide. Disadvantage is that the results could be generalizable mainly to that specific archetype. Participants information (age, whether registered to vote, etc.) would also be collected to reiterate the process. Independent variables would typically include the information layout and candidate photos. Dependent variable would be information retention through a scored quiz on this info. Further analyses would reveal a kind of structure and functionality required.

Proof of Concept

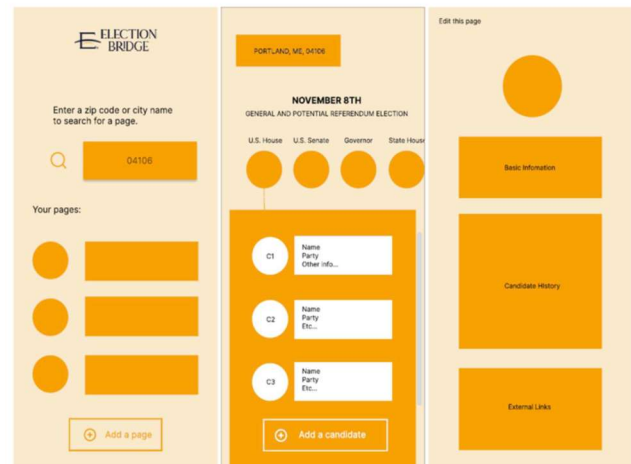


Prototype Development



Design Description

The design highlights certain features that we thought were vital and found in all our respective versions of the prototypes. Everyone took upon 2 personas each to design initial prototypes for. I was tasked with designing the Mandatory and Discretionary versions after some group discussions. Certain features that were common to all archetypes was the inclusion of a search by zip code. A vibrant display with the user's saved pages appearing on the home screen would save a considerable amount of effort and cognitive memory load. The candidate page would segregate based on the different forms of elections. A comprehensive drop-down list of the candidates and other affiliations would be available for the user to see and interact with. On deeper dive, the user should be able to retrieve information about the basic information, candidate history, and external links respectively. Specific contributions initiated from the research and discovery phase of target population interviews. I was also engaged in compiling the different responses to reiterate the questionnaire which produced better insights during design of prototype. I templated a proof of concept which then served as a framework to design prototypes for six different personas by reiterating and evaluating them through own peer reviews.



We would like to design for a more universal nature as well as include various features within this design. An auditory and haptic feedback system would greatly influence the design's multimodality. Most of the designs remain crucial for the basic necessities of this app idea. The various issues addressed are inclusivity and diversity. We tend to have various features that does not limit the application to only 'normal users' such as information relay through voiceover and other accessibility tools. Specific contributions underlined the ease of reiterating various versions of the prototype. My initial research interview insights spread across multiple horizons to think and rethink about potential solutions. Being an active participant in the group working sessions made the design of the research protocol and empirical experiment simple. Marketing the idea to the masses would be the next big obstacle that genuinely requires smart tactics and plans.

Conclusion and Future Work

The design process was incredibly enlightening, and the experience was a brilliant one. We learned a lot technically as well as regarding time management and teamwork. We learned about usability being important in the design process, as well as putting ourselves in the shoes of the users. Throughout our project we found that what we necessarily thought was important and needed in an application wasn't exactly what the user needed. This highlights the importance of prototyping and heuristics for evaluation techniques.

By building the prototype of a civic engagement app, we gained a lot of useful experience in prototyping. Implementing this system for real in future would be a great deal for us and every citizen involved in making the world a better place. The evidence is obvious. Citizens would like to get the most out of a civic engagement and intelligence app that provides them with an educational foundation to make the most of their votes. Electing and providing a better form of engaging with the elected officials would help bridge the gap between technology and activism.

My take is that this ideology serves as more than just a centralized repository for information about various parties. This is a venture that serves to educate the crowd. This in turn would help generate various data-led insights for better governance and voter turnout. It would certainly be interesting to see the kind of results if a heavy majority of the voting population consciously tried to exercise their right to vote. This is leading to critical benefits and positive impacts on communities for generations to come. After all, the main motive is to always understand humans, identify their needs and produce innovative solutions that transforms the world. Keeping up with the latest technological advancements right from Augmented or Mixed Reality to different receptors for our senses will help in future developments for technology.

Acknowledgments

Throughout the semester, it was a pleasure to be in this class and I have learned a great deal of information regarding Human Computer Interaction (HCI). It is particularly beneficial because many of us will be applying these concepts in future as well as in our day to day lives without even realizing it. We thank our HCI lecturer Hari Prasath Palani for this valuable experience, and our classmates who have helped us by providing feedback and being supportive every single step.