Capstone Project Proposal

INFM 480

Britney Williams
MERCER UNIVERSITY | I.T. & INFORMATICS

Executive Summary

Tradesman and construction work is a field of necessity and profession that is a great contribution to society. Coronavirus (COVID-19) brought to light various aspects of life for many people that were otherwise overlooked. As people spent more time at home and were able to identify home improvements they needed or wanted, some people were faced with the realization of how they have been inattentive to their home. Due to the impact of the pandemic COVID-19, over 975,000 jobs were lost in just one month in the construction industry according to Engineering News Record (Ichniowski, 2020). With this, many people were lacking the ability to connect physically, and homeowners and handymen alike were faced with a challenge of taking the risk to interact or forego it altogether. Now that we are on the other side of the pandemic, there is still a lack of resources available to tradesmen to find work and homeowners to be connected to them. Currently, the website HomeAdvisor is the largest platform connecting homeowners and specialists together and this research study aims to explore the usability of the website and gain a general understanding of a user's experience in order to create a website that encompasses unique solutions, called Home in Stone.

Home in Stone offers the opportunity for homeowners and tradesmen or contractors to virtually be connected to homeowners in need of projects small to large or vice versa in a seamless manner. Typically, when people have issues with their home it can be a daunting task to find reliable sources to fix the problem which can make an issue more frustrating. HomeAdvisor by Angie has a long list of various resources but does have a lot of Usability and UX issues to be addressed. For instance, a user of the site must go through a tedious list of questions prior to being linked to resources which may or may not impact the user's experience negatively leading them to search for alternative solutions to their issue. Conversely, when a tradesman is looking to list their service, they must create an account and wait to be contacted by a representative sans the option to build their profile on their own. When faced with predicaments such as looking for work or looking for reliable solutions to a problem, the usability and overall user experience can greatly determine the outcome of a website's engagement

Introduction

Britney Williams
Research Proposal
Research Methods & Project Management

The focus of this study is to effectively conduct a Usability Evaluation on the website HomeAdvisor to evaluate users' overall satisfaction with a site and determine how efficiently they can achieve their end goal. Usability is defined as the qualitative assessment of a user's experience or interaction with tools such as a website, application, device, system or software (Garrett, Orville, 2006). It encompasses the satisfaction, efficacy and overall success of the user and a system. In the Information Age, as technology continues to evolve, the matter in which designers can reach their audience continues to transform and grow in importance to a products success. The idea of designing a website specifically to meet the needs of tradesman and homeowners came from my family doing an unsurmountable number of upgrades and changes to their home while going through the COVID-19 pandemic. When everyone was mandated to stay at home, they found hard to disregard areas of their home that needed improvement and even found things to upgrade in order to have fun. Conversely, they found it difficult to find tradesman who were able to do the jobs because generally, they were employed by companies which were low in operation due to the pandemic and everyone was at home with their talents, seemingly unable to be located.

One person in my family that did major things to their home was my father. He replaced his entire roof due to a leak, redid the flooring through the first level of his home due to it being flooded, built a deck in his backyard, installed an above ground pool, and even built a fence around his acre of land. In his circumstance, he initially turned to HomeAdvisor to outsource some of the jobs but did not like the process, so he resorted to Google and primarily word of mouth. His fence and deck were built by his neighbor, his roof replacement and flooring were done through my partner who connected him with tradesmen in the construction industry, and for the rest he relied on local options found on Google. This is how the idea of Home in Stone was conceptualized.

Research Question

Britney Williams
Research Proposal
Research Methods & Project Management

To know that such a solid resource like HomeAdvisor was available for use, yet alternative options were gone about to reach the same end goal led me to question how important the usability of a site is and led me to ask the question, how can I build a site that positively impacts the user's experience? This study aims to answer the question, "What are the most effective usability techniques that can be employed to make a positive impact on the user experience (UX) of HomeAdvisor by Angie?". Usability is a multidimensional understanding that is comprised of intuitive design, ease of learning, efficiency of use, memorability, error frequency/severity, and the user's subjective satisfaction (Garrett, Orville, 2006). The site should have a user interface that incorporates basic designs, that meet web standards that are familiar to the user as these components will have a positive impact on the user's learning curve and proficiency when using the site. Additionally, the site should allow users to make decisions quickly that result in a practical solution with little to no errors. All these things considered have an impact on the user's overall satisfaction, which is important to the success or failure of a site. The best method in going about reaching such goals is by ensuring the website has a user-centered design.

Thorough user-centered design consists of identifying the people who would use the site, in this case of HomeAdvisor, it typically would be homeowners and tradesmen who have the task of searching for someone to work on a specific project or posting services/skills for hire in search of work. To ensure that the needs of each user group is met, it is important to ask questions relevant to the facets of usability such as is the system useful? Is HomeAdvisor usable? Is the brand and design desirable? Are users able to navigate the website with ease, is information findable? Are the design elements trustworthy, is the site credible? Does the site consider limitations of its users, is it accessible? Finally, what is the overall worth of the site, is it valuable? By dissecting a website in search of the answers to these questions, a clearer understanding can what the most effective usability techniques are that can be employed to make a positive impact on the user experience (UX) of HomeAdvisor.

Research Methodology

This research aims to assess the user experience of homeowners or tradesmen with the site HomeAdvisor through qualitative data collection methods such as a usability study, heuristic's evaluation, interview, and surveys.

The research objectives of this study are:
1. To observe users' interaction with HomeAdvisor
2. To assess user perceptions of HomeAdvisor
3. Identify barrier and/or limitations of HomeAdvisor

The research questions of this study are:
1. How do the users interact with the site HomeAdvisor?
2. How do the users perceive the site HomeAdvisor?
3. What are the barriers and/or limitations of HomeAdvisor?

The research methodologies outlined below were specifically selected and crafted for this research due to the nature of Usability Study and the qualitative data that is aimed to be extracted from the participants. This study can be conducted in person or remotely and the test can be self-guided or with use of a moderator. For the research conducted in this study, the Usability Testing designed for this research includes a facilitator to guide participants through various real-life tasks to observe their use of the site. The facilitator administers verbal directions and tasks that the user performs and provides feedback regarding their experience. This testing method aims to identify if users can execute tasks successfully and measure how long it takes to complete said tasks. The heuristic evaluation is a set of 10 pre-existing principles designed to optimize the usability of a websites design and interface. For this research it will be used to identify heuristic violations which will define specific areas or gaps in the user interface that are the cause for specific issues in the user experience. The issues identified will be given their own severity rating which are A. Cosmetic Issue, B. Minor Usability Problem [the user can still complete the task], C. Major Usability Problem [the user struggles to complete the task], and D. Severe Usability Problem [the user cannot complete the task]. The Interview and Survey portion of this research study is a mixed-method approach designed to gain a detailed understanding of the users' opinions, behavior, and overall experience. For the interview, the questions are open-ended and formatted to allow

for in-depth information to be collected. The survey gently mirrors the interview, asking for a satisfactory rating from 1-5, with 1 being the least likely and 5 being the most likely.

Qualitative data produces textual results rather than numerical and aides in understanding the experience, rather than produce measurable results. An interview script, which has been piloted and revised, will be used to introduce the participant to the study and to ensure that each participant receives the same information, in the same order, decreasing the standard deviation of the participant's experience. There will be (5) participants in the study who are friends and family members that will be observed in a quiet setting while asked to complete a set of defined tasks on the site HomeAdvisor. As the participant is being observed, notes will be collected by hand on the interview guide for further review later. Upon completion of observation, the participant will be interviewed with a predetermined list of (17) questions, where their reposes will be notated, and they then will be asked to complete a survey on their own with (8) questions regarding their experience. After the various data has been collected through the methods of heuristic evaluation, usability testing, interviews and surveys, the data will be analyzed through content and thematic analysis. These forms of analysis will be employed to identify recurring patterns and themes between the participants in order to derive a solid understanding of the users' perspective. The aim is to categorize repeated phrases, words, and experiences for each participant to generate an outline of the systematic issues to be concentrated on for Home in Stone's website.

Relative to the cognate area of I.T. and Informatics, this research study highlights the multi-disciplinary study of Human-Computer Interaction (HCI) and how it centers on developing a 'natural' discourse between a user and a system that considers a users' needs, abilities, limitations, emotions, personality and experiences (Babich, 2020). HCI and Usability intersect wonderfully and are important to the overall success of a product by ensuring that user interfaces are well designed to support a user along with their goals and tasks.

Data Collection Instruments

Pre Test Questionnaire
Do you have previous experience using the website HomeAdvisor by Angie? If yes, what task have you completed in the past? Was it successful?
How often do you use technology?
What are the typical devices that you use?
Have you used technology to share your services? [Tradesman]
Have you used technology to find services?

Task Observation
Task 1: Please search "Roof Repair" and select "Repair a Natural Slate Roof" and proceed with attempting to find services.
Task 2: Please attempt to register yourself as a handyman who provides "Lawn Care" services. You can fill in the information with Zip Code "30301", "John Doe", Mobile Number "470-240-8133", with email 10804730@live.mercer.edu.
Task 3: Please attempt to undo your last action.
Task 4: Please attempt to "Start a Project" of your own, you may use the identifier information previously provided.

Interview Questions
1. What part of the site did you like the most?
2. What part of the site did you like the least?
3. What was your experience like navigating the site?
4. What task did you find difficult to accomplish?
5. What task did you find easy to accomplish?
6. What did you like about the websites' interface?
7. What didn't you like about the websites' interface?
8. What do you think about the way the information was presented?
9. Were you able to complete your task in a timely manner?
10. What information were you looking for that was not available or difficult to find?
11. Did you encounter any errors? If so, what were they?
12. How was the process in recovering from the errors?
13. If you could change any aspect of the site what would it be?
14. If applicable, what caused you frustration?
15. If applicable, what surprised you?
16. How would you describe your overall experience using the site?
17. Would you recommend this site to other people? Why or Why not?

Survey:

Please rate the following from 1-5:

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

It was easy to find the information I needed. _____

Whenever I made a mistake using the system, I was able to recover easily. _____

I was able to complete my task quickly. _____

I felt comfortable using the system._____

The information is presented in a clear and concise manner. _____

I was able to navigate the site easily. _____

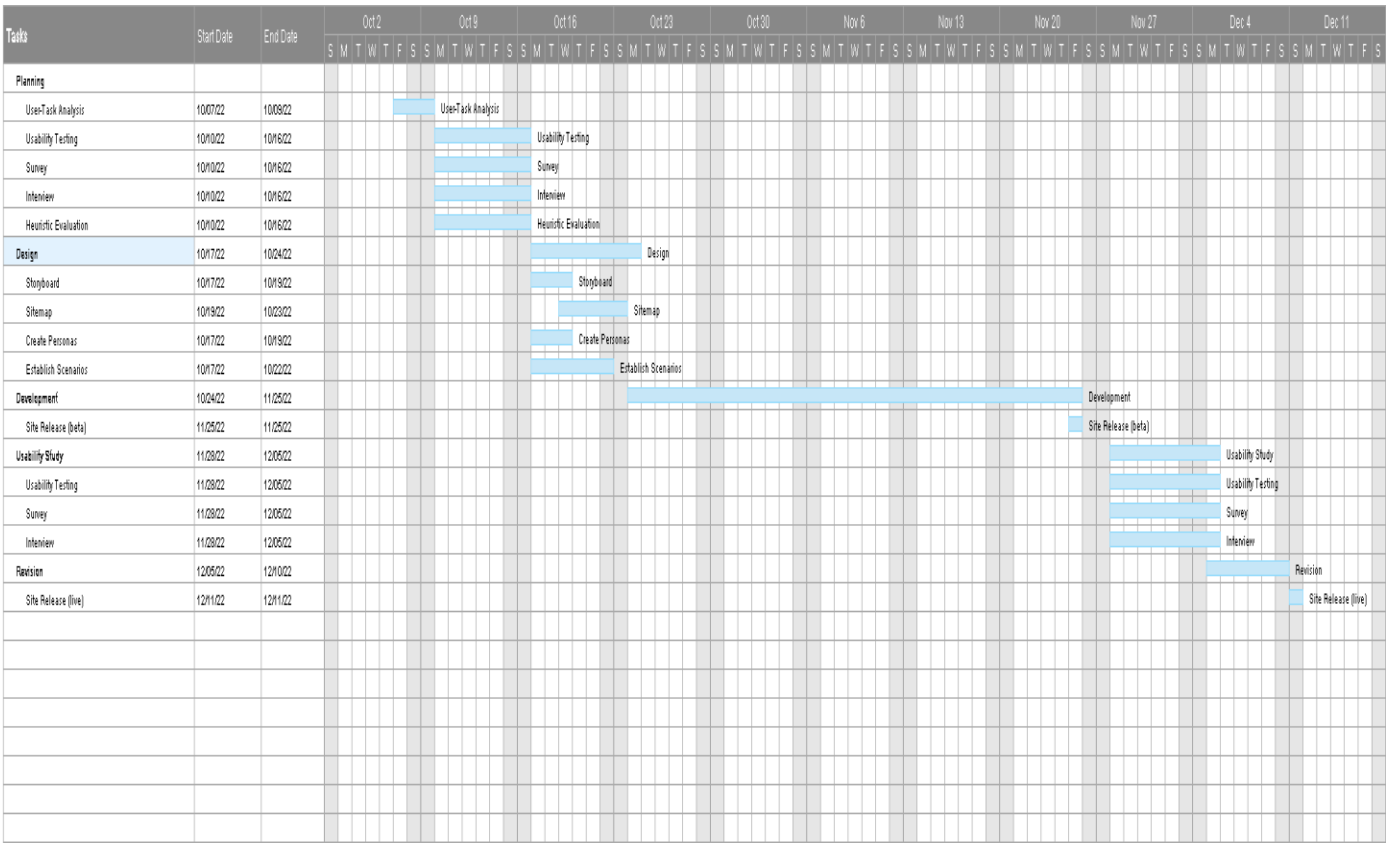
I found the site hard to use. _____

I would recommend this site/program to other people. _____

Project Planning Report

Britney Williams
Research Proposal
Research Methods & Project Management

Here is the planned schedule for the execution of this research study:



1	**Planning**		
2	User-Task Analysis	BW Britney Williams	10/07/22
3	Usability Testing	BW Britney Williams	10/10/22
4	Survey	BW Britney Williams	10/10/22
5	Interview	BW Britney Williams	10/10/22
6	Heuristic Evaluation	BW Britney Williams	10/10/22
7	**Design**	BW Britney Williams	10/17/22
8	Storyboard	BW Britney Williams	10/17/22
9	Sitemap	BW Britney Williams	10/19/22
10	Create Personas	BW Britney Williams	10/17/22
11	Establish Scenarios	BW Britney Williams	10/17/22
12	**Development**	BW Britney Williams	10/24/22
13	Site Release (beta)	BW Britney Williams	11/25/22
14	**Usability Study**	BW Britney Williams	11/28/22
15	Usability Testing	BW Britney Williams	11/28/22
16	Survey	BW Britney Williams	11/28/22
17	Interview	BW Britney Williams	11/28/22
18	**Revision**	BW Britney Williams	12/05/22
19	Site Release (live)	BW Britney Williams	12/11/22

References

Britney Williams
Research Proposal
Research Methods & Project Management

Anderson, N. (2020, June 18). *How (and Why) to Conduct a Heuristic Evaluation*. People Nerds. Retrieved October 10, 2022, from https://dscout.com/people-nerds/heuristic-evaluations

Babich, N. (2020, July 8). *Man and Machine: A Guide to Human-Computer Interaction*. A Guide to Human Computer Interaction (HCI) | AdobeXD. Retrieved October 9, 2022, from https://xd.adobe.com/ideas/principles/human-computer-interaction/man-and-machine-guide-to-human-computer-interaction/

Garrett, J., & Orville, P. (2006). *User Experience Basics*. usability.gov. Retrieved October 8, 2022, from https://www.usability.gov/what-and-why/user-experience.html

Ichniowski, T. (2020, May 8). Construction Loses 975,000 Jobs in April, Due to COVID-19 Impacts. Construction Loses 975,000 Jobs in April, Due to COVID-19 Impacts. Retrieved September 12, 2022, from https://www.enr.com/articles/49333-construction-loses-975000-jobs-in-april-due-to-covid-19-impacts

Moran, K. (2019, December 1). *Usability Testing 101*. Nielsen Norman Group. Retrieved October 10, 2022, from https://www.nngroup.com/articles/usability-testing-101/

Virginia Polytechnic Institute and State University. (2018, September 21). *Research Methods Guide: Introduction*. Virginia Polytechnic Institute and State University Libraries. Retrieved October 9, 2022, from https://guides.lib.vt.edu/researchmethods