USABILITY TEST REPORT: WAKE COUNTY SALVATION ARMY

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EXECUTIVE SUMMARY

The current usability study was conducted in Morrisville, NC between 23rd - 26th November 2013 to test the usability of the Wake county salvation army website. The main objective of the usability study was to assess the ease of use, intuitiveness and efficiency of the website to accomplish certain tasks. The study collected quantitative as well as qualitative measures. The insights and the related research questions are reported in detail in the following table:

Research Question	Insights from the Study
Are participants able to locate relevant information on the website?	Participants found it very easy to locate the information about who runs the organization, financial information and how to donate to the organization. There were some issues regarding locating the information about volunteering and finding information about activities for children. Participants failed in locating information about how they can help homeless children due to unintuitive acronym of the project as well as finding a way to be on the mailing list of the newsletter.
What did the participants think about the information on the website?	Most of the participants were okay with the information on the website suggesting that the website preformed well when coming to sharing relevant information, however few participants pointed out that the information was not upto-date.
What are the strengths of the website?	Responses by participants suggested that they liked the amount of information shared and could use the website to accomplish majority of the tasks. One of the participant (P4) liked and used the large red buttons on the homepage to navigate while most of the other participants used the main menu to navigate.
How the website can be improved?	The participants wanted left tree navigation within each section to facilitate navigation rather than using the main menu at the top. The top menu can be made static/stationary to improve the usability as well. Performance data and qualitative data suggested that some work needs to be done on the labeling of the sub-menu items and cross-linking sections to help users reach the relevant information.
What were other usability issues observed?	Participants' reactions to forms suggested that some required fields need to be made optional and some information needs to be expressed in clear terms. There is too much white space and the screen real estate needs to be used optimally to reduce scrolling.

METHOD

PURPOSE OF THE STUDY

The main objective of the current study was to assess the usability of wake county salvation army website through several tasks to investigate the effectiveness and ease of use. For this purpose both quantitative and qualitative data were collected regarding following factors:

- · Task success and failure rate
- Time on tasks
- · Errors, alternative paths and impediments in accomplishing the tasks
- Impressions about the user interface
- Overall experience of using the website to accomplish the tasks in the session

PARTICIPANT CHARACTERISTICS

For the current study, there was not any specific criterion for participation, since this website is targeted towards general public who may need help or may want to provide help. The current study investigated how people, who would like to extend help by volunteering and donating, interact with the website. Information regarding demographics and experience with non-profit websites collected from the participants is presented in Table 1.

Table 1. Participant Characteristics

Characteristic	Number of Participants
Gender	
Male	2
Female	2
Age	
26-35 years	2
36-45 years	2
Ethnic Background	
Asian	4
Educational qualification	
Masters Degree	4
Field of Education	
Engineering	3
Finance	1
Members of non-profit organization	
Yes	1
No	3
Visited website of a non-profit organization	
Yes	4
No	0

From Table 1, it is clear that the current sample was predominantly Asian, highly educated (Masters degree) and were not members of any non-profit organization mostly. Both the genders were well represented. Participants represented two age groups (both the age groups represented the young adults). All the participants had visited some type of non-profit organization and thus had

some experience with the non-profit organizations' websites. As there were only four participants, reporting in terms of percentages was deemed to be misleading and thus was avoided.

TEST ENVIRONMENT

LOCATION

The study sessions were conducted at the researcher's home located in Morrisville, NC. The researcher ensured to create ideal testing conditions by keeping the noise level and disturbance to the minimum.

SET-UP

The study was set-up in the home-office of the researcher. Participants performed all the tasks on a Dell Latitude laptop with Windows 7 installed on it. The laptop was attached to a 19" inch Dell Monitor for better display of the website and the participants accessed the website and did tasks on the monitor display. The website was opened using the 31.0.1650.57 m version of Google Chrome browser. The task scenarios were printed on A4 size sheets in landscape orientation and the font used was 24pt Calibri. The audio for each study session was recorded using Smart Voice Recorder software installed on the Samsung Galaxy S III Android phone. The researcher used the Microsoft Excel program installed on the MacBook Pro to record notes of each session and the stopwatch function in Alarm clock application of the MacBook Pro was used to time the tasks. The participant sat on the swiveling chair while the moderator sat on the non-swiveling chair besides the participant to observe the monitor screen closely and constantly. The set-up can be seen in Figures 1-3.



Figure 1: Test set-up with the devices used for testing and recording and the seating arrangement.



Figure 2: Test set-up with the audio recording device and the scenarios.

The stopwatch application of the MacBook Pro was used to time the tasks.

Microsoft Excel was used to record the task order, time on task and observations during the session.

Figure 3: Device and software used to conduct and record the test session.

TEST DESIGN

The current study used a within-subjects design by default, since only one non-profit website was tested and all the participants attempted all seven tasks. To counter the possible learning effects and order effects, the sequence of the tasks was varied across the participants. The random task order for each participant was arrived at using an online randomizer found at http://www.random.org/lists/. The task order for the four participants is presented in Table 2.

Table 2: Task order per participant

Task Assignments				
Participant 1	4,3,6,2,5,1,7			
Participant 2	3,1,4,7, 6,2,5			
Participant 3	2,1,7,3,5,4,6			
Participant 4	3,4,2,7,6,5,1			

On an average, each session took around 1 hour. The duration of each session ranged between 50 minutes-75 minutes. At first, the participants filled the pre-test questionnaires (see Appendix B) reporting their demographic details, web-browsing habits and experience with non-profit organizations' websites. After the pre-test questionnaire, the participants attempted the seven tasks using the wake county salvation army website. Each task scenario was printed on an A4 sheet as shown in Figure 2. The participants used think-out loud protocol as they attempted each task so that the moderator can fully understand and record their interaction with the website. After attempting each task, participants rated their experience in terms of difficulty level of the task, the intuitiveness of the website in terms of understanding where to go to accomplish a particular task, efficiency and need of assistance to accomplish a task (see Appendix C). After completing all the tasks, participants rated their agreement on twelve statements regarding the wake county salvation army website (see Appendix D) to get their overall impression regarding the website. The researcher also debriefed the participants and asked a couple of open-ended questions (See Appendix E) to elicit qualitative data and impressions regarding the website. The moderator script and the session log can be found in Appendix G and Appendix H respectively.

TASK SCENARIOS

The tasks attempted in the current study are presented in Table 3. Each of the tasks was presented in a context (see Appendix A). During designing the study, the researcher estimated time limit for each of the task based on her own experience of doing the tasks and judgment, taking into consideration the think-out loud time.

Table 3: User Tasks and estimated task times

Task	Task	Time estimate
No.		
1	Finding information regarding officials running the organization	3 minutes
2	Finding information regarding tutoring youngsters in the community	5 minutes
3	Finding information about donating furniture to wake county salvation army	5 minutes
4	Finding information about helping homeless children	5 minutes
5	Finding information about enrolling one's kids in Sports activities	5 minutes
6	Finding a way to be informed about the events organized at the wake county salvation army	5 minutes
7	Finding latest financial information of the organization	5 minutes

DATA COLLECTION

The current study collected both qualitative as well as quantitative data to address the research questions mentioned earlier in the report.

QUANTITATIVE MEASURES

- Number of participants who accomplished the tasks successfully
 - Finding information regarding officials running the organization
 - Finding information regarding tutoring youngsters in the community
 - o Finding information about donating furniture to wake county salvation army
 - o Finding information about helping homeless children
 - o Finding information about enrolling one's kids in Sports activities
 - Finding a way to be informed about the events organized at the wake county salvation army
 - o Finding latest financial information of the organization

User performances were recorded in terms of (a) Success within time limit, (b) Success outside the time limit, (c) Success with some hint or partial success, (d) No Success

- Time taken for each successfully completed task
- Post task ratings
- Post-test questionnaire agreement ratings

QUALITATIVE MEASURES

- Qualitative data was elicited from the participants mainly through the think-aloud protocol, some probes and follow-up questions and were analyzed in terms of:
 - o Impressions about the website
 - Expectations regarding the information displayed and where they expected to find relevant information
 - Points of confusion
 - Understanding of the terminology
 - User attitudes
 - o Errors committed/ detours taken while attempting the aforementioned tasks
 - Number of times a specific path was used to accomplish a task

RESULTS

USER TIMING AND TASK COMPLETION RATES

Overall, the participants were most successful in finding information regarding the officials running the organization and finding information regarding donating furniture. Almost all participants could access the financial information of the organization or at least could find the relevant section on the website, which had financial information. Almost all the participants except one participant each could find information about tutoring youngsters and finding information about enrolling kids in Sports activities using the website. Three out of four participants could not successfully find a way to be informed about the events at the organization by finding information regarding the newsletter. And finally all the participants failed to find information regarding helping homeless children on the website. The details of the task completion rates are presented in Table 4.

Table 4. Task completion rates by number of users

Task No.	Task	Success within time limit	Success outside time limit	Success with some hint/Partial Success	No Success	Total Success within time
1	Finding information regarding officials running the organization	4	0	0	0	4/4
2	Finding information regarding tutoring youngsters in the community	3	0	0	1	3/4
3	Finding information about donating furniture to wake county salvation army	4	0	0	0	4/4
4	Finding information about helping homeless children	0	0	0	4	4/4
5	Finding information about enrolling one's kids in Sports activities	3	0	0	1	3/4

6	Finding a way to be informed about the events organized at the wake county salvation army	1	0	0	3	1/4
7	Finding latest financial information of the organization	3	0	1	0	3/4

Table 5 displays the time taken by each of the participant to finish a task successfully. Time of a participant was not considered if the participant failed to accomplish the task. The time estimate is mentioned as well so as to compare the performance of the participant against it. The table also mentions the range of times taken (highest and lowest times), mean time and standard deviations.

Table 5:Successful Task Times (min: sec)

	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7
Time estimate	3 min	5 min	5 min	5 min	5min	5 min	5 min
Participant 1	1.27	1.1	1.04	-	1.11	-	2.45
Participant 2	1.51	-	2.06	-	1.09	-	0.28
Participant 3	1.22	2.05	1.47	-	-	4.31	0.56
Participant 4	3.10	3.14	2.17	-	1.57	-	1.37
Highest Time	3.10	3.14	2.17	-	1.57	4.31	2.45
Lowest Time	1.27	1.10	1.04	-	1.09	4.31	0.28
Mean Time	1.78	3.15	1.69	-	1.26	-	1.17
Standard Deviation	0.89	1.02	0.53	-	0.27	-	0.97

None of the participants could find information regarding helping homeless children, so none of their performance times was considered. Only one participant successfully could find a way to be informed about the events at the organization. Times of other three participants were not considered as they failed to accomplish this task. For the task of finding information about enrolling kids in Sports activities and finding information about tutoring children, one participant failed to find the information for each of the aforesaid tasks, their respective performance times were not considered in the descriptive statistics. One participant (P3) was partially successful in finding the section with the financial information her performance time was considered. The highest mean time and the highest standard deviation were for the task of finding information about tutoring youngsters. Lowest mean time was found for the task of finding the financial information. The lowest standard deviation was found for the task of finding information about enrolling kids in

Sports Activities. Across all the tasks, the task of finding a way to be informed about the events at the organization required highest time by P3, while the task of finding financial information required the lowest time by P2.

QUESTIONNAIRE DATA ANALYSIS AND POST TASK RATINGS

Table 6 displays the mean post-task ratings for each of the 7 tasks. The detailed task ratings can be found in Appendix F.

Table 6: Mean Post-task ratings on four scales for each task (Detailed ratings presented in Appendix F).

		Mean Post	task ratings*	
Tasks	Difficulty level of the task	Intuitiveness of the website in terms of understanding where to go to accomplish a particular task	Efficiency of accomplishing the task**	Need of assistance to accomplish the task**
Finding information regarding officials running the organization	4	3.75	1.25	1
Finding information regarding tutoring youngsters in the community	4	3.75	1.25	1.5
Finding information about donating furniture to wake county salvation	2.75		1.75	1
army Finding information about helping homeless children	3.75	2	1.75 2.75	3.25
Finding information about enrolling one's kids in Sports activities	3.5	3.75	1.25	1.25
Finding a way to be informed about the events organized at the wake county salvation				
army Finding latest financial information of the	3	3	2	1.75
organization	3.75	4	1.5	2

Note: * Scale used was: 1=Strongly disagree, 2=Disagree, 3= Agree and 4= Strongly agree. ** The items to measure the efficiency of accomplishing the task and need for assistance to do so were negatively worded.

Table 7 displays the post-test agreement ratings of the four participants based on their overall experience of using the website to accomplish tasks in the study session.

Table 7: Post-test agreement ratings (Total ratings for the statement mentioned in bracket for each rating category).

		Rating categories					
		Strongly			Strongly		
St.		Disagree	Disagree	Agree	Agree	Total of	Mean
no.	Evaluation Statement	1	2	3	4	ratings	ratings
1	I would like to use the website again.	-	1(2)	3(9)	-	11	2.75
2	I found it difficult to locate things on this website to accomplish tasks. *	1(1)	2(4)	-	1(4)	9	2.25
3	Overall, I found the website easy-to- use.	-	2(4)	1(3)	1(4)	11	2.75
4	I would need technical assistance to use this website. *	4(4)	-	-	-	4	1
5	I feel confident about using this website.	-	-	1(3)	3(12)	15	3.75
6	I would recommend this website to others.	-	-	2(6)	2(8)	14	3.5
7	It was easy-to-learn to use this website.	-	-	2(6)	2(8)	14	3.5
8	I was satisfied with this website.	-	1(2)	3(9)	_	11	2.75
9	I found using this website unnecessarily complex. *	1(1)	2(4)	_	1(4)	9	2.25
10	I found this website inconsistent. *	1(1)	2(4)	1(3)	-	8	2
11	Most of the people would understand how to use this website quickly	-	1(2)	1(3)	2(8)	12	3
12	The website supported accomplishing today's tasks well.	-	-	2(6)	2(8)	14	3.25

Note: * Negatively worded items

Participants were also asked open-ended questions regarding what they liked and disliked about the website.

Participants liked the following regarding the website expressed in their own words

I liked the three large red buttons on the homepage.

It was fairly easy to accomplish the task of donating furniture. I can call them up or just request a pick-up online.

In the request pick-up form, they are doing a good job of having a list of what items they pick-up upfront.

They seem to tweet on daily basis.

The website does a good job with information and details about the athletic activities for the children.

The pictures at the top of the request a pick-up form are very telling and nice!

I liked the search engine as it gave me some results.

In the registration form for signing for athletics, I liked that they had information about the coaches and the days.

Participants disliked and reported possible improvements regarding the following in the website expressed here in their own words

People who do not have a home may not have the luxury of a computer to log onto a website to get help in terms of shelter...so this (Get Help button) seems a little futile.

Have done a good job of informing about items picked-up in the request pick-up form, but the placement of the list is dicey.

I was expecting to see a form upfront to schedule a pick-up, but there is whole bunch of text that I have to read through.

Having just a one-day notice for an upcoming event is short notice to fit into my schedule.

The blog posts seem sporadic, so I am not going to sign up for it.

The placement of resources and media (In About Us section) is unfortunate.

The last news release is dated Feb. 1, 2013, so it seems like they are not doing a great job managing their news releases.

The social media icons should be on the top so that they are easy to spot and the user need not scroll down to find them.

The latest annual report available is 2011, 2012 report is missing and it is already 2013! So may be they are not focusing on all the sections of the website and this shows negligence.

I don't know what 'Project CATCH' is and I am not going to click on it if you don't tell me what it is.

The site has too much white space...

You need to use top navigation a lot and there is no left hand navigation.

It is not clear that you need to click on the symbol (red shied with salvation army written on it) for going to the homepage.

I wish they had a site map.

It would be great if they have some more information about the coaches for athletics like what is their day job rather than just having their names.

In one instance, I clicked on something and it opened a new tab but otherwise overall the site was consistent.

One or two instances where they could have more information in form of a link like 'more' wherein a person can click on to get more information.

I would have liked it if they would have had a chat assistant may be only during business hours—especially for volunteer opportunities.

FINDINGS & RECOMMENDATIONS

SUMMARY OF USABILITY ISSUES

The severity and frequency ratings are explained in the two tables below. In Table 8, the usability issues and their respective severity and frequency ratings are listed and described.

	Severity Ranking
	The issue is an irritant but does not usually
1	impede the user/participant from
	completing his task.
	The user/participant will have to exert
2	moderate effort to use the website, but
	will eventually complete his task.
	The issue will severely limit the user's
3	/participant's attempt to use the website.
3	The user will have great difficulty in task
	completion.
	The user/participant will not be able to use
4	or will not want to use the website
	because of the issue.

	Frequency Ranking*						
1	1 participant faced the issue						
2	2 participants faced the issue						
3	3 participants faced the issue						
4	All the participants faced the issue						

Note: *The frequency rankings should be expressed in terms of percentages for a study with larger sample size.

Table 8: Summary of usability issues

Issue	Severity	Frequency	Source(s) of Error
Participants were unable to find information about how to help homeless children.	4	4	This information is in the section called 'Project CATCH' which is an acronym and unintuitive.
Participants were not able to understand exactly how they will be able to be informed about events and happenings.	3	3	 Most of the participants did not spot the newsletters or thought that it would not help them to accomplish the task. Participants expected a field to enter an email address with a subscribe button. Most participants thought that social media and blogs would inform the users regarding the events.

Participants found it somewhat			Participants expected that
difficult to use the navigation.	2	3	each section of the website will have the sub menu items in the form of a left tree navigation rather than using the top menu every time. • The current display of the top navigation appears only if one is hovering over it and disappears the moment a person moves away from the menu.
Too much space wasted on the site.	1	1	Lack of optimized use of screen real estate has added scroll to pages pushing relevant information below the fold in some sections.
Some language was difficult to understand.	3	4	The website has some acronyms like 'Project CATCH' and 'i2i movement' which are unintuitive for users who are unfamiliar with the work of the organization.
The information on the website was not up-to-date.	3	2	The participants noted that the outdated information (e.g. annual report, blog posts, news releases) suggested that these sections were not updated regularly.
The display of forms was a bit problematic.	2	4	 The participants noted that the forms, especially requesting pick up form, needed some work as it had lot of dense introductory text and the actual form was below the fold and requested some unwanted information. This page also failed in presenting clear & concise information in terms of what items were picked up.

Participants expected to find			The sections that the
some information in other			participants arrived at as a
sections of the website and			solution touched upon the
judged that they have	3	4	pertinent information but
accomplished the task when in			additional and relevant
reality they had not found			information was present in
relevant information.			other sections on the website.

DISCUSSION OF FINDINGS AND RECOMMENDATIONS

1. Participants were unable to find information about how to help homeless children

Issue	Severity	Frequency	Total of ratings
Participants were unable to find information about how to help homeless children	4	4	8

None of the four participants were able to find information regarding how they would be able to help homeless children using this website. Almost all of the participants wrongly assumed that this information was in context of women and children's shelter. The actual information for helping homeless children can be found under 'Project CATCH', wherein CATCH stands for 'Community Action Targeted towards Children who are Homeless'. This acronym is totally unintuitive for novice and infrequent users or people unfamiliar with the initiatives of the Salvation Army at Wake County.

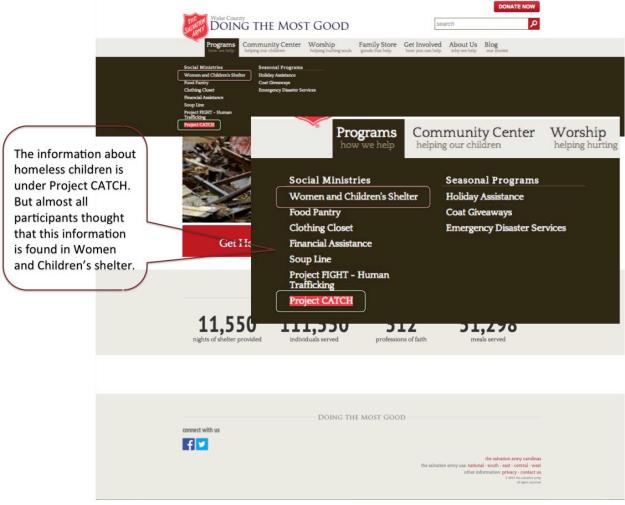


Fig.4: The top menu of the website and the relevant sections in the context of performance for the task of finding information for helping homeless children.

Participant 1 explored the website a lot to locate a page regarding homeless children. He decided to explore almost all the programs. He spent 8.56 minutes on this task and then stopped since he found some information regarding tutoring kids at emergency women and children's shelter as that was the closest he found. He found this information in the 'Get Involved' section when he clicked on 'Volunteer' and further on 'Working with kids' link. He had reached similar information in the section of 'Community center' when he clicked on 'Volunteer' button, however he pointed out that the community center section did not mention anything regarding helping children from emergency shelter.

Participants 2,3 and 4 spent 3.06, 3.50 and 5.09 minutes to locate the information regarding homeless children. P2 and P4 stopped when they arrived at information regarding 'Women and children's shelter' and P3 gave up after trying to locate the information for 3.50 minutes and then thought that this information was under 'Youth Volunteer Opportunities' within 'Get Involved' section. P2 first looked at the 'Programs' section and since he did not find anything related to children, he moved to 'Community center' as it had tagline — 'Helping our children' but after that he again explored the 'Programs' section and clicked on the 'Women and Children's Shelter' (See Fig. 4). P4 clicked on the 'Give Help' button on the homepage, after that

she first explored the 'Donate funds' link. She reported that it is unclear if she can select to donate funds to the cause of homeless children and then moved to 'Volunteer' section. In volunteer section, she clicked on 'working with kids' and found the information about emergency women and children's section and thought that this is the closest she found that has something to do with homeless children. She added that they should have a phone number in addition to the option of emailing a person. She also explored the Women and children's shelter in the Program's section to get an idea of what she can volunteer for but did not find information about how she can donate money for the cause of homeless children. In the debrief session, with respect to contacting personnel at the organization, she suggested that she would have liked to have an interactive chat functionality on the website. She reported that since this is a non-profit organization, they could have such chat functionality during business hours or at least a phone number, since with an email there might be delay in response.

The participants used the heuristic of satisficing as one of the participants (P1) suggested that he did not find information for homeless children but the closest that he found was women's and children shelter. Both P1 and P4 thought of using the 'Donate funds' to help the cause of homeless children but noted that it was very generic and gave no choice of selecting a cause (e.g. homeless children) to donate for. Surprisingly, none of the participants chose to use the search function to find the information. The search function is located at top right of all the pages, which is a web standard so locating the function was not an issue. In the debrief session, P4 searched for Homeless children and the relevant link was fourth link, it should be the first link ideally.

As mentioned earlier, participants missed the 'Project CATCH' due to an acronym. Interestingly, this is the only label, which is not elaborated upon under the Programs menu (See Fig. 4). The website designers should elaborate on the item name of 'Project CATCH' as they have done for 'Project FIGHT – Human Trafficking'. The designers need to be careful about using the same format for 'Project CATCH' as 'Project CATCH – Homeless Children' may sound weird and may not serve the purpose as 'Project FIGHT – Human Trafficking' does. It is recommended that the new label be tested before implementation.

The average post task ratings suggested that participants found this particular task difficult, time consuming and estimated that they may need assistance to accomplish this task. The average ratings also indicated that the website was not intuitive enough to facilitate this task.

It is recommended that the website designers and developers should refrain from using the organization jargon and acronyms and should rather use the probable keywords. I.e. 'Help Homeless Children' or something to that effect. Another recommendation is to cross-link pages. To illustrate the page regarding Women's and children shelter can be cross-linked with the page for helping homeless children, this way people who arrive at the Women's and children shelter have a way to reach the information relevant to help homeless children.

2. Participants expected to find some information in other sections of the website and judged that they have accomplished the task

Issue	Severity	Frequency	Total of ratings
Participants expected to find some information in other sections of the website and judged that they have accomplished the task	3	4	7

There were times when the participants failed to accomplish the task since they assumed that they have got relevant information when in reality they had not. To illustrate, P2 arrived at the 'After-school programs' page under the 'Community Center' section and assumed that he found information regarding how he can tutor youngsters in the community while P3 mistakenly assumed that the 'After-school programs' page has information regarding enrolling kids in Sports. This page had some mention of tutoring and athletics, however detailed information was available in other sections of this website.

To overcome this usability issue, it is recommended that each section have a list of related pages to help visitors reach relevant pages in few steps. Cross-linking would also help people to reach appropriate sections if they click on something by mistake.

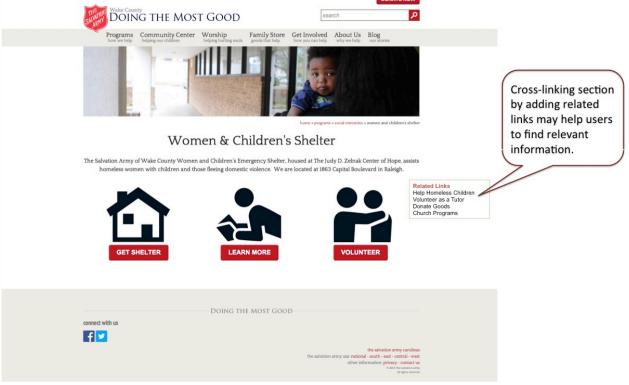


Fig 5: Adding 'related links' is recommended to aid locating relevant information.

3. Some language was difficult to understand

Issue	Severity	Frequency	Total of ratings
Some language was difficult to understand	3	4	7

All the participants faced some problems in understanding the language specifically some of the acronyms used on the website. The prime example being the 'Project CATCH', which was regarding homeless children and on account of the acronym none of the participants, accessed that page or thought it was relevant. The website uses quite a few acronyms and intriguing names, another example being 'i2i movement'. Two participants reported that they were curious regarding what it meant; so at least the 'i2i' term could make them curious.

Overall, it is recommended that unintuitive labels be avoided or they be accompanied with explanatory text so that it would support, facilitate and direct users to relevant information.

4. Participants were not able to understand exactly how they will be able to be informed about events and happenings

Issue	Severity	Frequency	Total of ratings
Participants were not able to understand exactly how they will be able to be informed about events and happenings	3	3	6

Two participants spotted the 'Newsletters' label under the 'About Us' section. Out of these two participants only one (P3) visited the section of newsletter and thought that it would inform her about the events and she can sign up for it by emailing the organization. When she clicked on the past newsletter (June 2012 newsletter), it gave an error page. She also opened the latest newsletter (September 2012) and thought that it does inform her about the events on the very first page. However, In the debrief session, P3 reported that she expected to have calendar view of the events rather than a list and informatory blurb about the events.

The other participant (P2) who arrived at the newsletter section did not think it was helpful for accomplishing the task. Another reason for that might also be that one has to click one more time to access the latest newsletter, which is a Portable Document Format (PDF) file. If the latest newsletter were displayed in the newsletter section, the user's time and a click would be saved. P1 and P4 were searching for newsletter but none of them located the 'Newsletters' sub-menu item.

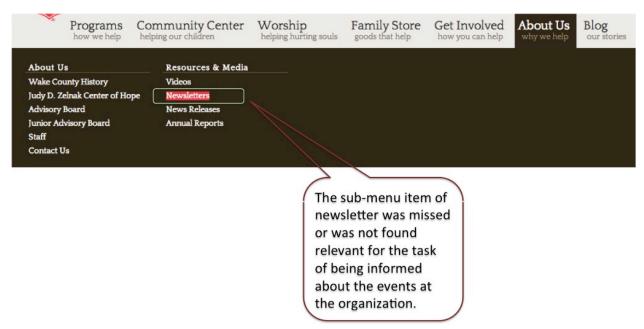


Fig 6: The 'newsletter' sub-menu item highlighted in the top navigation

All the three participants (P1, P2 and P4) thought of using social media and/or blog to keep abreast with the events and happenings at the organization. Regarding the social media, only P1 clicked on the icons for Facebook and Twitter. He reported that though they are convenient, he would prefer to be notified about an upcoming event in advance so as to prepare his schedule accordingly. Currently, the social media feed notifies about a particular event a day before and thus he reported that it was a short notice to accommodate an event in one's schedule. He also pointed out that in using the social media feeds, the feeds of Salvation Army may get buried under the other feeds that he has on Twitter and Facebook. He added that the tweets seemed irrelevant, as they did not tell him how he could help exactly. He also observed that the social media feeds and blogs did not appear to be updated regularly. P1 added that he may check their Facebook page, but he personally preferred Twitter than Facebook. Still he visited their Facebook page and noted that both the feeds were identical and not very helpful. P1 also scrolled the homepage at the beginning of the task and reported that most sites have a field to enter one's email address and a subscribe button to subscribe to a newsletter, he was searching for it on the homepage. P3 and P4 did not click on any of the social media icons or blogs, however, both of them thought that using social media and/or blogs would help them in keeping informed about the events at the organization. P4 reported that the social media icons were at the bottom of the webpage and very easy to miss, these icons need be promoted to the top of the page to be noticed.

Surprisingly, the average post task ratings did not reflect any difficulty of accomplishing this task, since the three participants who did not accomplish the task assumed that by using the blogs and social media they would be informed about the events at the organization.

P1 later on spotted the newsletter and visited that section. He observed that the newsletter was released quarterly and not monthly and he expected it on a monthly basis. Surprisingly,

none of the participants noticed that the latest newsletter was from September 2012, which is more than a year old. He added that though a newsletter is useful, he may not remember to check it every three months as it is released quarterly. He also reported that he did not prefer the way the subscription was set up, wherein one was supposed to email a person to be added to a mailing list rather preferred to have a field for email address and have a 'subscribe' button besides. It is recommended that a field to enter one's email id and a 'subscribe' button be provided for signing up for newsletters and it be placed above the fold on every page if the organization wants more people to subscribe to their newsletters. Furthermore, the latest newsletters need to be added to the website and newsletters be released and uploaded on the site regularly.



Fig 7: The newsletter section with September 2012 issue of the newsletter available and the way to be added to the mailing list.

Additionally a small calendar view of the events or list of events for a month can be present on the homepage or other relevant pages to quickly give a snapshot of the events for that month for the visitors.

5. The display of forms was a bit problematic

Issue	Severity	Frequency	Total of ratings
The display of forms was a bit problematic	2	4	6

P2, P3 and P4 accessed the form for requesting a pick-up and the moderator elicited reactions to this particular form from P1 in post task questioning.

P3 was not expecting a form to accomplish the task of finding information regarding donating excess furniture. She expected to find contact information, so that she can drop the excess furniture herself. Initially, she did not notice the contact information in the introductory blurb, which would have helped her to get relevant information. She reported that in case of the introductory text, she thought that there was lot of stuff going on and she ignored it as she thought it was an ad. She found the ads of Facebook and Twitter distracting. She skimmed through the form and thought that it was reasonable. She liked that the form page also consisted information regarding what the organization did not pick-up and liked it.

P1 and P2 reported that overall the form was acceptable but both of them thought that they would not like to share their email address and it should not be a mandatory field. P1 also observed that the link for the form was different¹ i.e. took the user to a totally different site. He added that though the link said 'https', he was worried about providing the information asked in the form for due to security concerns. He also added that he liked the information regarding what the organization picks-up but that information upfront is pushing the very important form below. He remarked that he would prefer getting information about what is picked-up before arriving at the form since this information needs to be known by the user before scheduling a pick-up and this would be more efficient than the current set-up. He found the introductory text mostly redundant and found the list of items not picked-up more relevant. Regarding the fields on the form, he reported that address and phone number should be enough and there was no requirement for email address and also for fields like cross street, apartment number so on and so forth.

P2 reported that he liked the pictures on this form and found them very informative. P2 also observed that the social media and other ads in between the text were unnecessary, irrelevant and distracting. He suggested that there were too many required fields in the form. He also noted that he had to scroll a lot on this webpage and there was a lot of white space on the sides. He disliked the unnecessary use of free form fields for certain questions, which added to the scroll. He suggested that the form can have time range option after the submit button so that he can schedule a pick up based on his personal schedule. He also suggested that the form should allow users to upload pictures of items to be picked-up, so the personnel can ascertain if these items can be picked-up and how many people may be required to pick-up the items.

P4 reported that she found the form reasonable however she did not read the introductory blurb at all. Moreover, both P2 and P4 reported that some of the information like small amounts of clothing, small appliances or color TVs older than 2000 being unacceptable is unclear and needs to be expressed in more clear terms. To illustrate, what small amounts of clothing or small appliances exactly mean or whether they accept CRT type of TVs manufactured after 2000s.

¹ The link for the pick-up form is https://www.easyreg.org/cgi-bin/easyreg/registrationdbase/MI4WCFHO9N/displayForm.pl?Q09KO5PS 2011

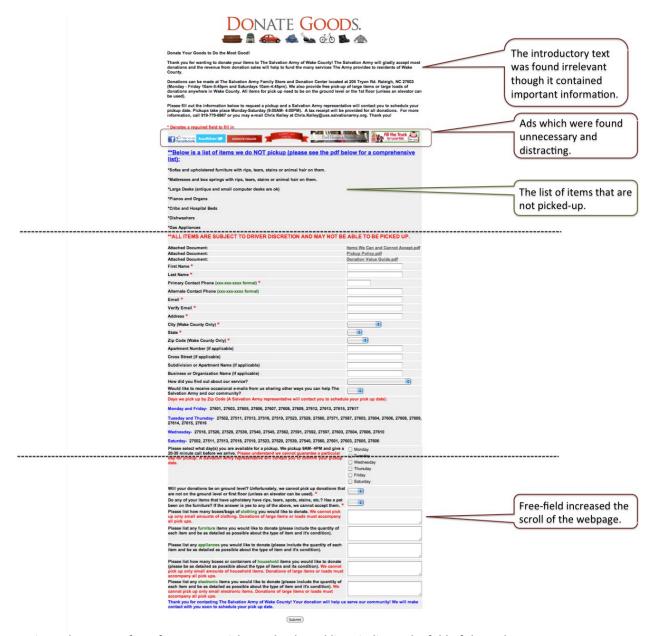


Fig 8: The current form for request pick up. The dotted lines indicate the fold of the webpage.

Currently, due to the text at the top of the page, the form has been pushed below the fold so a user could very easily miss it. It is recommended that the text be reduced and presented more effectively by using bulleted lists along with appropriate and limited use of bold fonts and colored fonts to grab attention to relevant pieces of information (e.g. contact information).

It is also recommended that the number of fields be reduced by getting rid of some of the unnecessary fields or making some fields optional. Moreover, the form looks inconsistent with the rest of the website and even the URL is totally different, some work needs to be put in to make it consistent with the rest of the website.

6. The information on the website was not up-to-date

Issue	Severity	Frequency	Total of ratings
The information on the website was not up-to-date	3	2	5

P1 and P4 noted that the website did not have the latest information. For the task 7 wherein the participants were supposed to find the latest financial information, P1 and P4 noted that the website was not having the latest annual report i.e. of the year 2012. For the task of finding a way to be informed about the happenings and events at the organization, P1 accessed the 'Blog' and noted that the blog entries seemed sporadic and it did not appear that it was updated regularly, thus he might not subscribe to the blog feed. P1 also explored the section on 'News Releases' and noted that the last news release was dated 1st February 2013, so it did not seem to be updated regularly as well. As mentioned earlier, though none of the participants noticed it, the latest newsletter available was from September 2012, more than a year old.

ANNUAL REPORTS

The Salvation Army of Wake County's 2011 Annual Report (Click to download a 4MB PDF)

Fig 9: The latest annual report available was 2011 report (as of Dec. 4, 2013).

It is recommended that to improve the reputation, trust, credibility and usability of the website further, efforts need to be taken to update the information regularly. Additionally as part of the social media strategy, efforts need to be devoted towards using the social media platforms of Facebook and Twitter regularly and efficiently in addition to generating conversations using the blog. The blogs and social media can be cross-linked with other sections of the website to increase the traffic to this website. Having outdated information on the website may seriously undermine the trust and reputation of the organization.

7. Participants found it somewhat difficult to use the navigation

Issue	Severity	Frequency	Total of ratings
Participants found it somewhat difficult to	2	3	5
use the navigation			

This issue did not impede accomplishing any particular task per say but was irritating and affected the efficiency of using the website. Participants 1,2 and 3 expected to see the sub-menu items of the top navigation to be displayed as a left tree navigation once a user was in one of the sections of the webpage. P1 predominantly always clicked on the main menu item (e.g. 'About Us') and was a bit irritated that the sub-menu items were not displayed on the left. It is a bit cumbersome to move the cursor every time to the top and navigate. Moreover, with respect to the main menu at the top, the menu items are displayed only when the user is hovering over the menu. If the cursor is moved away from the menu, the sub-menu items disappear.

It is recommended that the top menu be made static or stationary once the user hovers over it. Additionally, the sub-menu items be repeated as left-tree navigation to improve the usability and efficiency of navigating the website.



Fig 10: The recommended left-tree navigation within each section.

8. Too much space wasted on the site

Issue	Severity	Frequency	Total of ratings
Too much space wasted on the site	1	1	2

This was one of the minor issues noted by P2. He reported that there was too much of white space and that wasted the screen real estate. He noted that at times excessive white space was pushing things below the fold and increasing the scroll.

It is recommended that the screen estate be used in more optimal way. Consequently reducing the scroll and pulling some stuff above the fold so as to provide a hint to the users to scroll down to find relevant information.

CONCLUSIONS

Participants mainly appreciated following features of the website:

- 1. The website provided enough relevant information most of the times and especially the contact information to get in touch with appropriate personnel.
- 2. Participants really liked the information in the forms regarding what furniture is picked-up and what is not.

The website does a good job at providing multiple paths to reach the most important information to accomplish tasks and is ready to leverage the power of social media. The participants in the current study were fairly successful in accomplishing some of the tasks using the website while failed at accomplishing few other tasks. The responses to post-test rating scale indicated that the participants felt confident in using the website, found it easy-to-learn, would recommend it and thought that it supported the accomplishment of tasks investigated in the session (refer to Table 7). While they rated the site poorly in terms of ease-of-use, satisfaction with the website and willingness to use the website again (See Table 7). Accordingly, there are some areas wherein the design of the website can be improved to enhance the user experience. Below is a list of changes in design that would improve the user experience:

- 1. Refrain from using acronyms or add some explanatory text for the sub-menu items.
- 2. Add left-tree navigation within all the sections of the website to make the navigation efficient.
- 3. Cross-link different sections to facilitate locating relevant information.
- 4. Have updated information on the website to enhance trust of the users.
- 5. Promote the social media icons above the fold.
- 6. Provide a field for entering email address and a subscribe button to subscribe to the newsletters.
- 7. Promote the function of subscribing to the newsletters on the homepage above the fold and on other relevant pages.
- 8. Have a calendar view of the monthly events at the organization as a snapshot on the homepage.
- 9. Make optimal use of the screen real estate to avoid pushing content below the fold and adding scroll to the webpages.
- 10. For forms, make judicious use of typographical elements like bold and colored font and bulleted lists to highlight relevant information and reduce the amount of introductory text.
- 11. Design all the pages including forms consistently.
- 12. Provide a way for the users to interact real-time by adding chat functionality or a phone number to get information quickly in addition to the way of emailing someone to get more information.
- 13. Have a social media strategy to leverage the power of social media and blogs.

The website can be improved in terms of usability if aforesaid design changes are made and tested to see the change in the user experience.

Usability Test Report: Wake County Salvation Army

APPENDIX A

Task Scenarios

Task Scenario 1:

You want to know more about who runs this organization. How would you go about finding this information?

Task Scenario 2:

You have some spare time on your hand and would like to be engaged in community by tutoring youngsters in Math. Use this site to see how you can help youngsters in your community.

Task Scenario 3:

You are planning to make a big cross-country move and have some excess furniture items that you would like to give away. How would you use this website to give away your excess furniture?

Task Scenario 4:

You want to help homeless children and were told by your friend that Wake County Salvation Army does work for Homeless children. Find out how you can participate in helping homeless children using this website.

Task Scenario 5:

You are thinking of engaging your kids in some Sports to channelize their energy and want more information about the same. Use this website to find information about engaging your kids in sports

Task Scenario 6:

You would like to know about the happenings and events at this organization. What would you do to be informed?

Task Scenario 7:

Pre-test Questionnaire

You need latest financial information of this organization, how would you go about accessing it?

APPENDIX B

□46-50 years
Check the alternative that best describes your race/ethnic background? American Indian or Alaskan Native Asian African American Hispanic Caucasian Other
Check the highest education level you have achieved: Completed high school Some College Bachelor's degree Master's degree Specify the field in which you have earned the degree:
Do you browse web? ☐Yes ☐No
How long do you browse web? Less than 1 hour Between 1-2 hours Between 2-4 hours More than 4 hours Reasons for browsing web
Sites you visit most often: 1 2 3 4 5
Are you member of any non-profit organizations? ☐ Yes

Usability Test Report: Wake County Salvation Army

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□No
If yes, name the non-profit organizations where you are a member
What medium use to interact or keep up with the events at the aforementioned non-profit organizations?
What is your preferred medium for interaction with these non-profit organizations?
Have you accessed any non-profit websites? □Yes □No
If yes, Name the non-profit websites that you have visited in last 6 months 1
Reasons for accessing the aforementioned non-profit websites
APPENDIX C
Post-task Questions
This task was very easy to accomplish.
1 2 3 4 Strongly Disagree Agree Strongly Disagree Agree

I could understand how to accomplish this task immediately.

Usability Test Rep	oort: Wake County S	alvation Army		
1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	
It took too long	to accomplish this	task.		
1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	
I would need he	elp to accomplish th	nis task.		
1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	
		Арре	ENDIX D	
Post-test Ques	stionnaire			
Participant #:	(Filled by	the moderato	r)	
Please refer to t	the rating scale bel	ow and indicate	e your agreement with	following statements.
1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	
Statement				Rating
 I found it diffi Overall, I four I would need 	o use the website a icult to locate thing nd the website eas technical assistand nt about using this	gs on this websi y-to-use. ce to use this w	ite to accomplish tasks. ebsite.	

6. I would recommend this website to others.7. It was easy-to-learn to use this website.

9. I found this website unnecessarily complex.

8. I was satisfied with this website

Usability	/ Test	Renort:	Wake	County	/ Salv	ation	Δrmv
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- 10. I found this website inconsistent.
- 11. Most of the people would understand how to use this website quickly
- 12. This website supported accomplishing today's tasks well.

APPENDIX E

Post-test Interview

- 1. Tell me, what you liked about this website?
- 2. How can this website be improved?
- 3. Anything you would like to comment upon which was not covered by me in today's session.

APPENDIX F

Post-task ratings on four scales for each task (Total ratings for the task mentioned in bracket for each rating category).

Finding i						
Rating scale	Strongly Disagree	Disagree				
	1	2	3	4	Total of ratings	Mean rating
Difficulty level of the task				4(16)	16	4
Intuitiveness of the website			1(3)	3(12)	15	3.75
Efficiency*	3(3)	1(2)			5	1.25
Need for assistance*	4(4)				4	1
Finding info	ormation rega	rding tutoring	youngsters in	the community		
		Rating	categories			
Rating scale	Strongly Disagree	Disagree	Agree	Strongly Agree		
	1	2	3	4	Total of ratings	Mean rating
Difficulty level of the task				4(16)	16	4
Intuitiveness of the			1(3)	3(12)	15	3.75

website								
Efficiency*	3(3)		1(2)				5	1.25
Need for assistance*	3(3)			1(3)			6	1.5
Finding info	mation abo							
			Rating	categories				
Rating scale	Strongly Disagree		Disagree	Agree		Strongly Agree		
		1	2		3	4	Total of ratings	Mean rating
Difficulty level of the task				1(3)		3(12)	15	3.75
Intuitiveness of the website						4(16)	16	4
Efficiency*	2(2)		1(2)	1(3)			7	1.75
Need for assistance*	4(4)						4	1
Fine	Finding information about helping homeless children							
			л. авоат петр.	ing nomeies	3 (.	illui Cii		
	1			categories	3 (1	- Indicin		
Rating scale	Strongly Disagree			_		Strongly Agree		
Rating scale		1	Rating	categories	3		Total of ratings	Mean rating
Difficulty level of the task			Rating Disagree	categories		Strongly Agree	_	Mean rating
Difficulty level of the	Disagree		Rating Disagree	Agree		Strongly Agree	ratings	_
Difficulty level of the task Intuitiveness of the	Disagree 1(1)		Rating Disagree 2 2(4)	Agree		Strongly Agree	ratings 8	2
Difficulty level of the task Intuitiveness of the website	Disagree 1(1)		Rating Disagree 2 2(4)	Agree 1(3)		Strongly Agree	ratings 8	2
Difficulty level of the task Intuitiveness of the website Efficiency* Need for assistance*	1(1) 1(1)	1	Rating Disagree 2 2(4)	1(3) 1(3) 1(3) 3(9)	3	Strongly Agree 4 1(4) 1(4)	8 8 11	2 2.75
Difficulty level of the task Intuitiveness of the website Efficiency* Need for assistance*	1(1) 1(1)	1	Rating Disagree 2 2(4) 2(4) 2(4) ut enrolling o	1(3) 1(3) 1(3) 3(9)	3	Strongly Agree 4 1(4) 1(4)	8 8 11	2 2.75
Difficulty level of the task Intuitiveness of the website Efficiency* Need for assistance*	1(1) 1(1)	1	Rating Disagree 2 2(4) 2(4) 2(4) ut enrolling o	1(3) 1(3) 1(3) 3(9) ne's kids in	3	Strongly Agree 4 1(4) 1(4)	8 8 11	2 2.75

Difficulty level of the task			2(6)		2(8)	14	3.5
Intuitiveness of the website			1(3)		3(12)	15	3.75
Efficiency*	3(3)	1(2)				5	1.25
Need for assistance*	3(3)	1(2)				5	1.25
Finding a w		ned about the unty salvation		aniz	ed at the wake		
		Rating	categories				
Rating scale	Strongly Disagree	Disagree	Agree		Strongly Agree		
	1	2		3	4	Total of ratings	Mean rating
Difficulty level of the task		1(2)	2(6)		1(4)	12	3
Intuitiveness of the website		2(4)			2(8)	12	3
Efficiency*	2(2)		2(6)			8	2
Need for assistance*	2(2)	1(2)	1(3)			7	1.75
Find	ing latest finar	ncial informati	on of the o	rgai	nization		
		Rating	categories				
Rating scale	Strongly Disagree	Disagree	Agree		Strongly Agree		
	1	2		3	4	Total of ratings	Mean rating
Difficulty level of the task			1(3)		3(12)	15	3.75
Intuitiveness of the website					4(16)	16	4
Efficiency*	3(3)		1(3)			6	1.5
Need for assistance*	2(2)		2(6)			8	2

Note: * The items to measure the efficiency of accomplishing the task and need for assistance to do so were negatively worded.

APPENDIX G

Moderator Script

Introduction, consent and ground rules.

Hello, my name is ______. I would be walking you through today's session. First of all, I would like to thank you for taking time off your schedule to participate in today's session. Before we start, I would like to request you to switch off your cellphone so that we can concentrate in this session fully [if the participant refuses to switch off the cellphone, you can ask him/her to at least put it on silent and try and respond to it later after the session].

In today's session, I want your feedback on a wake county web site of Salvation Army. I would like to record the screen of the laptop that you would be using and your responses using audio for research purposes. I assure you that this recording will be used for research purposes alone and the data won't have any identifier information. Will recording the session be okay with you? The MacBook Pro has a screen recording software as well as audio recording software installed in it.

Session procedural details

As I mentioned earlier, we want your feedback regarding Dolphin browser. For this purpose, I would present you with few tasks one at a time, to be done on the website. As you are doing the tasks, I would like you to think out loud, that is, tell me what you are thinking, feeling as you are doing these tasks. This would help me in following you along and understand what are you looking at and thinking as you attempt each task. Do you have any questions at this point? Feel free to ask me questions if you do not understand something.

Now I would like to demonstrate the thinking out loud as I play this game. [At this point the moderator will demonstrate think-aloud protocol while using word-processing software and would offer the same software to the participant and ask him/he to try the think-out loud protocol and provide feedback and encouragement to the participant as s/he uses it].

As you attempt the tasks in today's session, I would like to emphasize two things. Firstly, today's session is designed to test the website and not you. The session is designed to understand how users interact with this website. And secondly, I have not designed the website, so you are not going to hurt my feelings by giving negative feedback. I would appreciate honest opinions which would give me a clear idea of what you like about the website as well as what you dislike about it.

Pre-test questionnaire

Before we begin with the tasks, I would like you to fill out this questionnaire to get some background information regarding your web browsing habits and experience with non-profit websites. Please feel free to ask me any questions regarding the questionnaire [Hands the pre-test questionnaire].

Before the task scenarios

[After the participant completes the questionnaire]. Now I will hand you cards with task scenarios on them one at a time. Read it out loudly and feel free to ask me questions if you have any and I will

try to answer them to the best of my ability. Once you are ready to attempt the task mentioned in the scenario, say 'Start' and start doing the task and remember to think out loud as you do the task. Once you are done with the task, say 'Done'. Remember that today's session is a test of the website and not you. Please think out loud so we understand your experience with the website clearly. After you have attempted the task I will ask you to rate the experience of doing the task on few rating scales. Do you have any questions at this point? Should we proceed to the tasks? [The first task card is handed to the participant].

Post-task questions

Now, I would like you to rate your experience of doing the task on following four scales. Feel free to ask any questions, if you have any [Hands the post task rating scales and a pen].

Post-test questionnaire

We are done with all the tasks, now I will give you another scale on which you can rate your overall experience of using the website. I would also ask you few questions to better understand your thoughts and feelings about using the website to do the tasks that you did today [Hands the post-test questionnaire and a pen].

End of the session

I would like to thank you once again for taking time to participate in today's session. We have got great feedback from you, which would help us better understand how users interact with the browser.

APPENDIX H

Session Log
Participant #
Task Order

Task	Start Time	End Time	Time take n	Think aloud comment s	Observatio ns about actions	Success/ No Success	Errors and recover y	Other comments