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Summative report and analysis of evaluation

Consent

All four participants provided their consent to participate in this study without voicing concerns over how data they generated might be used.

Pre-Test Questionnaire

Participants responded to each question on the pre-test questionnaire as follows:

<table>
<thead>
<tr>
<th>Question</th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
<th>Participant 4</th>
<th>Mean Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Question 2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Question 3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4.75</td>
</tr>
<tr>
<td>Question 4</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>3.25</td>
</tr>
<tr>
<td>Question 5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>Question 6</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

The fact that all participants strongly agreed with the first question statement “I access the World Wide Web daily,” implies that all participants considered themselves to be extremely proficient users of the World Wide Web at the time this evaluation was completed. Participant responses to questions two and three indicate a preference for searching activities over browsing activities when looking to obtain information via the World Wide Web. Finally, a strong positive response to the question five statement “If I were in the market to purchase an
automobile, I would likely use the World Wide Web to obtain information about automobiles prior to purchasing one," suggests a need amongst participants in this study to access via the Web the type of information provided by the Edmunds.com Web site.

Tasks

Three criteria were used to evaluate participant performance on the benchmark tasks included in this evaluation: ability to successfully complete a task, total number of corrective actions required to complete a task, and the total amount of time required to complete a task. Measurement of the first criterion was linked to measurement of the third criterion in that if a participant required more than five minutes to complete a task, her performance on that particular task would be considered a failure. Measurement of the second criterion involved noting the total number of times a participant needed to view a previously viewed page, delete and/or retype text, or request a verbal prompt from the proctor in order to complete a task. The proctor completed measurement of the third criterion using a stopwatch that he started at the moment a participant began work on a particular task. The proctor paused the stopwatch during the loading of additional Web pages whenever a page selected by a participant was invisible to the point where she could perform no work toward successful completion of the task at
The proctor restarted the stopwatch once the selected page loaded to the point where the participant could resume working.

Participants earned responses listed in the table below using the Microsoft Internet Explorer 5.0 Web browser enlarged to fill a 1024 X 768 CRT display. The browser cache and history files were cleared prior to the testing of each participant. Each participant also made use of a two-button wheel mouse and a Windows QWERTY keyboard to complete each of the tasks.

<table>
<thead>
<tr>
<th></th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
<th>Participant 4</th>
<th>Mean Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T1 Corr actions</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>T1 Time</td>
<td>00:25.83</td>
<td>00:27.95</td>
<td>00:41.92</td>
<td>00:35.37</td>
<td>00:32.77</td>
</tr>
<tr>
<td>T2 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T2 Corr actions</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>T2 Time</td>
<td>01:25:48</td>
<td>00:40:28</td>
<td>02:19:49</td>
<td>02:05:89</td>
<td>01:62.98</td>
</tr>
<tr>
<td>T3 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T3 Corr actions</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>T3 Time</td>
<td>00:47.00</td>
<td>00:33.64</td>
<td>01:50.67</td>
<td>00:47.28</td>
<td>00:59.65</td>
</tr>
<tr>
<td>T4 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T4 Corr action</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>T4 Time</td>
<td>02:20.23</td>
<td>00:40.17</td>
<td>00:43.29</td>
<td>02:20.82</td>
<td>01:51.88</td>
</tr>
<tr>
<td>T5 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T5 Corr action</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>T5 Time</td>
<td>00:51.03</td>
<td>00:51.21</td>
<td>01:15.78</td>
<td>01:58.82</td>
<td>01:23.68</td>
</tr>
<tr>
<td>T6 Success</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>T6 Corr Action</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>T6 Time</td>
<td>00:36.39</td>
<td>00:34.05</td>
<td>02:39.76</td>
<td>00:49.91</td>
<td>01:16.71</td>
</tr>
</tbody>
</table>
Some notable findings include the fact that not one participant failed to complete a task as specified in under five minutes. The amount of time participants required to complete the first task varied little with no significantly outlying values. However, the first task required Participant 2 to engage in two corrective actions, whereas other participants required no such actions to complete this task.

On average, participants managed to complete the first and third tasks in the least amount of time, earning mean times of 00:32.77 and 00:59.65, respectively. The low amount of time required to complete the first task may be attributed to the high degree of direction provided within the description of this task; with the exception of the second task, descriptions used to introduce other tasks did not specify which control(s) participants should use in order to fulfil the criteria for completion. Another factor that may have aided participants in their completion of the first task is the prominence of the control they were required to use as it appeared on the Edmunds.com home page. The control needed to complete the second task (i.e. the “Advanced Search” button) was not nearly as prominent as the “NEW” button required for completion of the first task.

The relatively low amount of time required by participants to complete the third task might be attributed to the extremely large number of possible answers to the request for delivery of “Any article greater than 50 words
that discusses the process of leasing a motor vehicle.” This task also invited participants to think about the work they needed to perform in order to complete the task as a more traditional, loosely defined Internet-based search for information. The fact that on the evaluation pre-test, all participants indicated a preference for searching techniques when using the World Wide Web may have also affected their performance in completing this task.

Participant performance on other tasks in the evaluation was less consistent and is therefore more difficult to interpret. Some factors that may have contributed to this inconsistency include degree of ambivalence expressed by participants in their response to pre-test statement number four, “I consider the topic of automobiles a personal interest of mine.” Another factor that likely contributed to the lack of performance consistency across participants was the presence of language bias. During this portion of the evaluation, two of the participants revealed to me that they are non-native speakers of English, and that the names of the cars they were being asked to locate were unfamiliar to them.

Post-Test Questionnaire

Participants responded to each question on the post-test questionnaire as follows:
At first glance, the mean responses to questions two and three seem to indicate contradictory participant opinions regarding the organization and presentation of information on the Edmunds.com Web site. Upon further consideration, however, it became apparent that way in which question number three was worded led participants to respond in a positive fashion, despite their overall lack of enthusiasm regarding this aspect of the site.

Participants also responded in a mildly negative manner to questions four and five. Question four pertains to the visual appearance of the site, and question five to the methods supported by the Edmunds.com site for location and retrieval of information. Interestingly enough, no participants chose to make use of the “Search” function when completing the task portion of the evaluation, despite their indication of preference for this mode of interaction in the evaluation pre-test. The search tool on the Edmunds.com site is extremely small and difficult to locate, and it does not appear at all on the first page of the site.
Interview

Each participant took part in a brief interview immediately after he or she completed the post-test questionnaire portion of the evaluation. Participants were asked to respond to all questions in a natural manner and encouraged to express their honest opinions. The proctor recorded the responses of each participant onto microcassette for later analysis.

A brief summary of responses provided by each participant appears below:

Participant 1

Question 1: There was too much stuff on the opening page to make it very useful for you to know where to go.

Question 2: You could just about find anything you would like to know about any car, used or new, on (the Edmunds.com Web site). What I liked least about it is the pain involved in finding the information that you want.

Question 3: I could use the Edmunds.com Web site to perform all of the tasks, but I don’t think I did them exactly smoothly. (Later...) There was a big difference between the times when you told me where to go, and the times (when) I had to figure it out.

Question 4: I would reduce all of the crap on the opening page, there’s too much. (Later...) The beginning should almost be just the new car/used car that they had at the top with a little more, ‘cause to me once you make that distinction...all the rest of the stuff that you could find on the site seemed to be underneath those two categories.

Participant 2

Question 1: It has a lot of information, so in that sense it’s good...but sometimes, getting to exactly the information you want can be tricky.

Question 2: I really like how they list review graphs and text reviews. I wish they would increase the number of cars they provide reviews and graphs for, and also increase the depth of the graphs.

Question 3: None of the tasks seemed too simple. All of them seemed like things an ordinary person might do if they came to the site. (Later...) I could use the Edmund’s
site to do everything you asked me to do. If I couldn’t wouldn’t that sort of be your fault?

Question 4: I would reduce the number of links on the opening page, and get rid of the banner ads. That turkey crossing the road and snapping wishbone business was driving me crazy! (Later...) In general I guess I would just streamline the presentation of content, reduce the number of ways people can get to the same tool from any one page, and other stuff like that.

Participant 3

Question 1: I guess it is a good Web site, because of the depth of information (provided).

Question 2: I liked again the depth to which it goes on each model; I haven’t found a site as comprehensive as that one. (Later...) The thing I like least about it, bad...just glitches in the interface. The second time I did things I found I could do them much better.

Question 3: It’s not the tasks that were difficult but I guess just...switching between tasks was difficult.

Question 4: (I would) reduce the items in very small areas. (Later...) The search function, now that you point that out, I guess I would make it more visible.

Participant 4

Question 1: It was not a good Web site, but maybe just for getting the information it was good but, I don’t like the design. (Later...) It was not...intuitive.

Question 2: I liked the way I could find everything there, every car seemed to be there. (Later...) I didn’t like (the manner of) searching...the bar at the top was not very understandable.

Question 3: None of (the tasks you asked me to perform) were very difficult.

Question 4: I would definitely change the design. There’s too much information on the pages.

Participants all seemed to agree that the tasks they were asked to perform during an earlier part of the evaluation were not too difficult, and could feasibly represent tasks undertaken by real-life visitors to the Edmunds.com Web site. While all participants agreed that they could perform the tasks asked of them, and none accused the site of being unusable, they nevertheless all critiqued
the overall design of the site in some form or another during the interview. The most often cited problem pertained to the volume of information contained on each page. Two of the participants also criticized the lack of visible search features on the page. Finally and perhaps most intriguing is the fact that both women participants in the evaluation disliked the visual appearance of the Edmunds.com Web site, while the male participants did not. One female participant even went so far as to classify it as a “guy site.” Unfortunately, when asked for more information, this participant declined to elaborate.

Conclusions

The current form of the Edmunds.com Web site does not completely fulfill its objectives and could benefit from design and usability improvements. While the site does provide a large amount of consumer information about new and used automobiles, it does not deliver its contents in a way that is easily accessible to prospective car buyers. An empirical evaluation of four participants indicated that improvements to the Edmunds.com Web site should concentrate on improving the overall robustness of the site. In other words, the Edmunds.com Web site should at all times support the user in determining and achieving his or her goals. By increasing robustness, learnability of the site should also improve.
To improve robustness and learnability, the overall amount of information that is simultaneously present on prominent pages throughout the site should be reduced. Designers should attempt to replace large amounts of descriptive information (e.g. hyperlinked names of cars distinguishable only by their mechanical specifications) with organizational systems that allow users to distinguish among items of interest without requiring their attention to minute details. Alternate methods of obtaining information, such as search functions, should appear prominently on every level of the site. Designers should shunt to the periphery potentially distracting items such as graphical advertisements and links to supporting and/or affiliated Web sites. Duplicate links leading to identical locations should be eliminated, as those also distract the user from his or her goals. Finally, the color scheme and overall visual appearance of the Edmunds.com Web site should be reconsidered due to the fact that it may offend some users.
Greeting

Hello, and thank you for participating in my usability evaluation of the Edmunds.com Web site. The purpose of this evaluation is to gather data respecting how easy the Edmunds.com Web site is to use, and how effective it is in performing its primary goal of conveying new and used car information to prospective car buyers in a straightforward fashion.
Consent

Before we proceed, I would like to obtain your consent to use data you provide in this evaluation of the Edmunds.com Web site. You should know that at certain points where specifically indicated some of your verbal responses will be recorded to tape in order to facilitate analysis. However, your identity as it pertains to your participation in this evaluation will remain totally confidential at all times. The final analysis I complete will be submitted for a course grade and may appear publicly on my personal Web site. However, the results of this evaluation will neither be published nor otherwise used by any commercial enterprise, no one will gain financially from your participation, and once again, your identity as a participant will never be revealed.

If you feel comfortable with the above information and wish to provide your consent, please tick the box below. If you do not agree, please tell me immediately so you may exit this evaluation owing no further obligations of any kind.

☐ I provide my consent and wish to continue participating in this evaluation.
Pre-Test Questionnaire

The purpose of this questionnaire is to gather background data from you that will help me interpret your performance during the following evaluation. Please answer each of the following questions according to the scale provided. Indicate your response by circling the item of your choice.

1. I access the World Wide Web daily.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree

2. When using the World Wide Web to locate information on a particular topic, I often engage in browsing activities such as selecting items of interest from a list.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree

3. When using the World Wide Web to locate information on a particular topic, I often utilize search functions such as search engines in an attempt to pinpoint exactly what I need.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree

4. I consider the topic of automobiles a personal interest of mine.
5. If I were in the market to purchase an automobile, I would likely use the World Wide Web to obtain information about automobiles prior to purchasing one.

6. I am familiar with the Edmunds.com Web site.
Tasks

I will now ask you to complete a series of benchmark tasks that will require you to interact with the Edmunds.com Web site. These tasks are designed to measure the degree to which you can easily and effectively utilize the Edmunds.com Web site to obtain information about automobiles. We will proceed through the list of tasks from one to six in the order that they appear below. Before you start work on each item, I will read information describing the task and the criteria you must meet in order to complete the task. While you work on each item, I will measure the number of corrective actions you take (e.g. returning to previously viewed pages, deleting typed characters, etc.) as well as the amount of time it takes you to meet the task criteria for completion. (Note: Page load times will be excluded from all time-based measures of your performance.)

1. Locate using the “NEW” button the manufacturer suggested retail price (MSRP) of a new 2001 Honda Prelude 2dr Coupe (2.2L 4cyl 4A) that corresponds to the area in which you live.

In order to complete this task, you must verbalize the correct MSRP price that corresponds to the area in which you live.
2. Use the “Quick Search” feature (located within the “Advanced Search” section of the site home page) to locate the trade-in value of a used 1999 Subaru Impreza 2 Dr RS AWD Coupe.

In order to complete this task, you must verbalize the correct trade-in value.

3. Complete the necessary steps to locate any article greater than 50 words that discusses the process of leasing a motor vehicle.

In order to complete this task, you must have loaded on your computer display any article of greater than 50 words that discusses in some way the motor vehicle leasing process.

4. Find out what cars reside in the same model class as a 2002 Pontiac Aztek AWD 4dr SUV (3.4L 6cyl 4A).

In order to complete this task, you should first obtain information about the 2002 Pontiac Aztek. You should then determine how to compare it with similar model vehicles via the Edmunds.com Web site. When finished with this task, you should have loaded on your computer display a screen that displays competing model vehicles in a side-by-side fashion.
5. Determine what features come standard on a new 2002 Acura RSX 2dr Hatchback w/Leather (2.0L 4cyl 5A).

To complete this task, you will need to locate new car information that pertains to the Acura RSX and select the appropriate category of information to view. When finished you should have loaded in your Web browser a page that lists Acura RSX standard equipment.

6. Locate vehicle quality ratings (i.e. “Edmund’s Ratings”) earned by the 1990 Mazda Miata 2 Dr MX-5 Convertible.

In order to complete this task, you will need to locate used car information regarding the 1990 Mazda Miata and view the appropriate category of information. When finished you should have loaded on your computer display a horizontally oriented bar graph depicting ratings earned by the car in various categories such as “Safety,” “Reliability,” “Performance,” and so on.
Post-Test Questionnaire

The purpose of this questionnaire is to gather information regarding your impressions of the Edmunds.com Web site, now that you have used it to complete an assortment of tasks. Please answer each of the following questions in order according to the scale provided. Indicate your response by circling the item of your choice. Please feel free to respond in such a way that echoes your honest opinions regarding the Edmunds.com Web site, as it is most of all your subjective “gut” reactions that I am seeking to measure in this portion of the evaluation.

7. I found the Edmunds.com Web site easy to use.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree

8. I thought information throughout the Edmunds.com Web site was presented in a clear and well-organized fashion.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree

9. The Edmunds.com Web site allowed me to find exactly the information I needed.
1=strongly disagree
2=disagree
3=not sure
4=agree
5=strongly agree
10. The Edmunds.com Web site was pleasant to look at.

1=strongly disagree  
2=disagree  
3=not sure  
4=agree  
5=strongly agree

11. The Edmunds.com Web site allowed me to locate information in a way that was familiar to me.

1=strongly disagree  
2=disagree  
3=not sure  
4=agree  
5=strongly agree

12. I would return to the Edmunds.com Web site to search for information again.

1=strongly disagree  
2=disagree  
3=not sure  
4=agree  
5=strongly agree
Interview

In this interview, I again wish to gather information regarding your impressions of the Edmunds.com Web site, only now I would like to you to provide responses verbally and in your own words. I will read each of the following questions aloud; please answer each one in an informal manner using natural language. I will record onto tape your responses for later analysis. Once again, please feel free to respond in ways that echo your honest opinions regarding the Edmunds.com Web site.

1. Did the Edmunds.com meet your criteria for a “good” Web site? Did you think it was well designed? Please explain.

2. In your opinion, what did you like most about the Edmunds.com Web site? What did you like least about it? Please elaborate.

3. Did you feel you could use the Edmunds.com Web site to perform all of the tasks I asked you to complete smoothly? Did you find any of the tasks overly difficult to complete? Did any of them seem overly simple?

4. If given the opportunity, how might you improve the Edmunds.com Web site?