CHAPTER SIX

FINAL USER TESTING

6.1 Introduction
User Testing has been carried out throughout the design stage of the Blue Air Travel website development process. Through this feedback many improvements were incorporated into the designs. This chapter discusses the final user testing which was carried out with eight users before the release of the Blue Air Travel website prototype for the elderly.

6.2 The Process of User Testing
Firstly researcher selected 8 users from NASCOM according to the selection criteria as stated in chapter 4 (section 4.2). Briefings were given to the selected users. Next, task scenarios were given to them to evaluate the Blue Air Travel website. Then, questionnaires were administered to get feedback from their evaluation on the website’s usability.

6.2.1 Briefing and Task
All eight users were briefed by researcher on the structure of the activity and were told this is the final user testing to evaluate the usability of the website. The briefings also specified on what they had to do and why they had to do it. Everyone was assured that it would take less than an hour to finish it. However, time taken by each participant to finish the tasks was recorded. Three task scenarios were given to each of them. The three
tasks were divided to easy, moderate and difficult based on the number of steps to accomplish each task. Figure 6.1 show the task sheets that were given to the users.

**Task Scenario**

**Task One-Easy**
1. List ALL the destinations available from the Blue Air Travel Website behind this paper.

**Task Two-Moderate**
2. Please book a flight booking for 2 people from Kuala Lumpur to Langkawi. Please choose the cheapest fare possible. The date to be chosen is 1\textsuperscript{st} January 2008 till 2\textsuperscript{nd} January 2008. State the total price here RM__________.

**Task Three-Difficult**
3. Please book a night stay in a deluxe hotel room at Hotel Helang in Langkawi. The date to book is from 2\textsuperscript{nd} January to 3\textsuperscript{rd} January 2008. Please state the total amount here. RM__________.

![Figure 6.1: Task Sheet](image)

All users were to answer the usability questionnaire only after the task scenarios given was completed. Table 6.1 presents the time taken by the users to finish all three task scenarios. The table shows that the time taken to accomplish the task are shorter compared to the previous prototypes especially task three.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Task Scenario 1</th>
<th>Task scenario 2</th>
<th>Task scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 min 20 sec</td>
<td>3 min 10 sec</td>
<td>2 min 11 sec</td>
</tr>
<tr>
<td>2</td>
<td>52 sec</td>
<td>5 min 20 sec</td>
<td>3 min 20 sec</td>
</tr>
<tr>
<td>3</td>
<td>33 sec</td>
<td>3 min 22 sec</td>
<td>4 min 15 sec</td>
</tr>
<tr>
<td>4</td>
<td>49 sec</td>
<td>4 min 15 sec</td>
<td>2 min 56 sec</td>
</tr>
<tr>
<td></td>
<td>1 min 45 sec</td>
<td>10 min 24 sec</td>
<td>6 min 45 sec</td>
</tr>
<tr>
<td>---</td>
<td>--------------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td>1 min 12 sec</td>
<td>4 min 36 sec</td>
<td>4 min 28 sec</td>
</tr>
<tr>
<td>6</td>
<td>52 sec</td>
<td>3 min 22 sec</td>
<td>2 min 42 sec</td>
</tr>
<tr>
<td>7</td>
<td>45 sec</td>
<td>4 min 04 sec</td>
<td>2 min 56 sec</td>
</tr>
</tbody>
</table>

**6.2.2 Questionnaires**

The purpose of the questionnaire was to measure the usability of Blue Air Travel website and to ascertain whether the recommended guidelines features are successful in meeting user’s needs. The questionnaire consisted of three sections that are Part A, Part B and Part C. Questions in Part A is to know user’s profile and computer usage. Part B is to know user’s Internet experience level. The main part of the questionnaire is Part C which measures the usability of the Blue Air Travel website. In this part, the researcher formed 22 questions. Most of the questions were formulated based on the features in recommended guidelines from chapter 2 (table 2.3) it measures the design, content, layout and style, navigation and multimedia effect on the Blue Air Travel website. In addition to that some questions to measure the overall reaction on the website were also added.

These questions used Likert scale to measure. Using the Likert scale, each question was rated from five point scale with appropriate anchors at each end. (E.g. very frustrating to very satisfying). Thus it will be neutral at number 3. The scale ranged from the negative output (e.g. 1) to a positive output (e.g. 5). It meant that the better end corresponded to a higher number (e.g. 5). The researcher observed users while they were attempting to answer all the questions to ensure the accuracy of results, as some might interpret
questions otherwise. They were only guided if they asked any questions or otherwise no help or suggestions were given. This was to avoid any discrepancy on the result.

6.2.3 Evaluation Results

This section discusses the evaluation of the results of Part A, Part B and Part C. Table 6.2 shows the result of Part A and Part B of the questionnaire. The table presents information of the user's background and Internet experience level.

Table 6.2 Part A and Part B Questionnaire Results

<table>
<thead>
<tr>
<th>Part A: User's Profile and Computer Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User</strong></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Computer Literacy</td>
</tr>
<tr>
<td>Year of Study(class)</td>
</tr>
<tr>
<td>Did you participate in earlier iteration?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part B: Internet Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Experience</td>
</tr>
<tr>
<td>Internet access from</td>
</tr>
<tr>
<td>Usage per week:</td>
</tr>
</tbody>
</table>

Results of Part A show that there are 5 male users and 3 female users. Four of them belong to age 65 to 70 years category. One user is in the age 71-75 category, another two
are in the 76-80 range and one user is in the 80 and above category. Computer literacy among the users shows that all of them are literate for more than 2 years. User shows that many of them are more than a year in the computer class, some of them have been learning for almost 3 years. They continued learning as they believe each of these lessons teaches them some valuable knowledge about computer.

Part B, shows that most of them have 1-2 years experience in Internet usage and only two of them have 2-5 years experience in using the Internet. The results show six users access Internet from both home and class. The other two users access Internet only at the computer centre. There are 6 users who use Internet 2-10 hours weekly. However, two of the users spend less than 2 hours in a week. It also proves that those who use Internet from home use the Internet 2-10 hours weekly whereas those who uses only in a computer class use the Internet less than 2 hours weekly.

Table 6.3 Result of Part C: Usability of the Website

<table>
<thead>
<tr>
<th>Part C : Usability of the Website</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Reaction of the Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 I found this website.</td>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>Wonderful 4.25</td>
</tr>
<tr>
<td>2 The website kept me.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>6</td>
<td>Very Stimulating 4.75</td>
</tr>
<tr>
<td>3 The felt the website was…</td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>Very Flexible 4.38</td>
</tr>
<tr>
<td>4 Compared to other websites this website was more user friendly.</td>
<td></td>
<td></td>
<td>1</td>
<td>7</td>
<td></td>
<td>Strongly agree 4.875</td>
</tr>
<tr>
<td>5 Please rate the overall usability of the website.</td>
<td></td>
<td></td>
<td>4</td>
<td>4</td>
<td></td>
<td>Very Satisfying 4.5</td>
</tr>
<tr>
<td>The Color</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 How was your reading ability with the colour contrasts of the page?</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>Very Satisfying 4.25</td>
</tr>
<tr>
<td>The Font</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Was the default font used appropriate?</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>Very Satisfying 4.13</td>
</tr>
<tr>
<td>8 The increasing and decreasing text function</td>
<td></td>
<td></td>
<td>1</td>
<td>7</td>
<td></td>
<td>Strongly 4.88</td>
</tr>
</tbody>
</table>
Table 6.3 shows the results of Part C of the questionnaire. The numbers in the scale column indicate the number of users from 1-8. The mean or the average of the result is stated at the last column of the table. The mean of each question is calculated by adding the multiplication of the number of user with the scale they represent and dividing the total with 8. The calculation below shows the mean for question 1:
Mean for Question 1: \( \frac{(1 \times 3) + (4 \times 4) + (3 \times 5)}{8} = 4.25 \)

An overall positive result is shown on the table, which is shown towards the number 5 ratings of the Likert Scale. Only question number 6 shows the user is very frustrated with the contrast colour of the page. Findings through an informal discussion before the end of the session proved that particular user has glaucoma. Glaucoma patients have less ability to distinguish between colours.

**6.2.4 Usability Results of Blue Air Travel Website**

This section presents graphs as shown in Figure 6.2 till Figure 6.23 which represents result of each questions in Part C.

![I Find this Website...](image)

Figure 6.2: How the User finds the Website to be?

The graph shows that 1 user chose to stay neutral, the other four users say it is ‘good’ and another 3 users chose ‘Wonderful’. The mean 4.25 proves that a user finds the website to be good.
Figure 6.3: How Stimulating the Website is?

Figure 6.3 shows that the website is very simulating as agreed by 6 elderly users, the others have agreed as only simulating. The mean is 4.75.

Figure 6.4: How Flexible user Feels when Using the Website
The graph in figure 6.4 shows that one user chose to be neutral when it comes to flexibleness of the website. However the majority has said it is very flexible and 3 have agreed it is flexible only. The mean is at 4.38.

![Graph showing user perception of website compared to other websites](image)

**Figure 6.5: User Perception of the Website Compared To Other Websites**

The graph in Figure 6.5 shows that the Blue Air Travel website is more ‘user friendly’ when compared to other websites for the elderly. The other websites which that the users compare are the other travelling website that they browse through. The mean which falls at 4.88 proves it.
Figure 6.6: Overall Usability of the Website

Overall the website is rated as satisfying. Equal number of elderly has said that it is satisfying and also very satisfying and the mean is 4.63.
Figure 6.7: How Satisfied are Users on the Contrast of the Page?

The graph in Figure 6.7 shows that one user has chosen to say the colour contrast is very frustrating for him to read the content of the pages. This is due to his disability as he has glaucoma and mainly patients with glaucoma have very blur sight. In contrast 5 users have said that it is very satisfying and 2 users’ feedback was satisfying. The mean at 4.25 shows the majority of the elderly still like blue as a perfect colour for elderly websites.
Figure 6.8: Satisfaction of Users on the Default Fonts Used

This question proves that the preference for size of font varies for individuals. Two users rated it as neutral and 3 users rated the font to be satisfying and very satisfying. The mean is at 4.13 only for the default font. This shows that some users want to increase the sizes to bigger size to ease them on their reading ability. This proves that there is a need to have increase and decrease font function on the websites designed for elderly.
The Increasing and Decreasing Font Text Function was Helpful.

Figure 6.9 shows that majority of users strongly agree that the increase and decreasing font button is a success. The mean is at 4.88.

The Content Was Easy to Read and Understand.

Figure 6.10: The Readability of the Content on the Website
Figure 6.10 shows majority of users strongly agree that the content is easy to read. The mean is at 4.75.

![Terminology or Language Used on This Website was Clear](image)

Figure 6.11: How Users Agreed on the Terminology and the Language Used on the Website

The graph in figure 6.11 shows that majority of users strongly agree that the terminology and language used on this website is clear. The mean is at 4.88. One of the user suggested that he would prefer Mandarin as the main language. This can be incorporated in the future prototypes.
Figure 6.12: How Well Users Agree on the Organization of the Content and its Comprehensiveness

Graph in figure 6.12 shows that all the users equally agreed and strongly agreed the content of the website is comprehensive and well organized. This proves that the card sorting session really helped to pick the mental model of the elderly users.

Figure 6.13: How easy is it to make Hotel Booking?
Figure 6.13 shows that there is 100% agreement that the hotel booking is very easy to make.

![Figure 6.14: How easy is it to make Package Booking?](image)

Figure 6.14 shows different rating from user on the Package booking. Even though majority of the users rated it as very easy, 1 user stayed neutral and 2 users have agreed to easy to make package booking. The mean is at 4.5.
Figure 6.15: How easy was it to Choose and Add Destination?

The graph shows that the majority rated choosing and adding destination’s as very easy.

The mean for this graph is 4.75.

Figure 6.16: The Consistency of the Website’s Layout

Figure 6.16 shows five users strongly agreed that the layouts of the website are consistent and easy to follow. The mean is at 4.63. Thus it proves that when the elderly are
browsing they prefer websites which are consistent because this makes them feel that they are on the right track or else they can feel furious, lost and give up easily.

Figure 6.17: Layout of the Web Page Designs

The graph in figure 6.17 shows that 5 users strongly agreed that they have no problem with the layout of the page design. The mean of this graph is at 4.63.
Figure 6.18: The Satisfaction of Users on the Design of the Page

Figure 6.18 shows majority of users are very satisfied with the design of the pages. The mean of this graph is at 4.88.

Figure 6.19: How easy is to find the Link in the Pages?
Figure 6.19 shows that six of the users agreed that it is very easy to find the link to the next page or the other pages. The mean is at 4.75.

![Were the Labels easy to Follow?](image1)

6.20: How easy were the Labels to the Users?

Figure 6.20 shows that five users said the labels were very easy to them. The mean is at 4.63.

![How Confident Are You that You Found all the Relevant Information You Were Looking For?](image2)

Figure 6.21: Confidence Level of the Users on using the Website

Figure 6.21 shows that majority of the users are confident in using the website. Seven out of eight users have expressed their confidence in looking for relevant information from the website they are looking for.
Figure 6.22: How appropriate were the Buttons and Icons sizes?

Like the previous graph, the majority of the users strongly agree that the button sizes are appropriate. The mean is 4.88.

Figure 6.23: How Comfortable Are Users When There is No Scrolling, Blinking Images and Advertisements
Figure 6.23 shows that there is 100% agreement that the users are very comfortable when there is no scrolling, blinking images and advertisement.

6.3 Summary

There were no significant changes that need to be made except on the colour of the website where a user suggested he needs more contrast than light blue. All the main titles and buttons are all in black colour font. However, looking into the overall mean result it shows usability of the website after applying user centered design techniques and the recommended guidelines is a success. Conclusion and recommendations are included in the next chapter.