

The Effectiveness of Using Sitemap

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Abstract – This study examines the effectiveness of using sitemaps on user's performance in an information-searching task for two web sites. Twenty participants which are 10 females and 10 males aged 19 – 24 years old were participated in the study. There are two of types of tasks. First, the respondents were asked to do some activities' tasks on two websites. For each website, there were two types of tasks which are doing the tasks from the main page and the sitemap page. Furthermore, the "click" activities for answering the questions were counted. Then, the questionnaire was waiting for the next part to be filled by the students. The results showed significant effects on using the sitemaps. It was found that participants found the correct answers more often, required less time, visited significantly fewer web pages, and required fewer clicks to complete the task when the sitemap was used. However, it was found that the participants had a lower success rate in finding the correct answers when the sitemap was unused.

Keywords : sitemap, navigation, effectiveness

I. INTRODUCTION

One of the most common problems users have when using the World Wide Web is become lost when navigating on it. Three common questions users ask themselves are where am I now?, how do I get where I want to go? And where does this link go? In fact, it has been stated by users that they fail to find specific information that they are searching for 42% of the time (Nielsen, 1998). The navigation problems show from the use of ambiguous link and the use of non standard navigation elements which can lead the users to the wrong page. Users must predict and determine to achieve their goals. How information is categorized, labeled and presented can determines not only make users can find what they need, but also affects user satisfaction and influences visits again. Forrester Research reported that poorly designed web sites can lose 50 per cent of potential sales when people cannot find what they are looking for, and that 40 per cent of users do not return to a site when that first experience is negative (Harley, McCarthy and Souza, 1998). Sitemaps, which one of the type of navigational elements, are believed to assist users in understanding the framework of a site. Therefore users will enable to organize the information within the site. The sitemap is used less often than other navigational elements such as bars and menus, but sometime it is necessary to be presented. Brink, Gergle and Wood (2002)

describe that "sitemap helps reinforce a good mental map of the site and give the user an opportunity to evaluate the scope of the site". In general, a sitemap is a model of the structure of a website on a single page.

The user can see the main categories and subcategories on a site. This visualization can be a literal graphical map or be text-based. Most studies seem to agree that sitemaps are very important to guide the users to understand the structure of the site. Russel (2002) reported what the current trends are for sitemap design whether most sitemaps just categorical lists or are it arranged hierarchically according to topic. Nielsen (2002) stated that users often overlook sitemaps or can not find them in usability tests. Although all of these studies have been done, more studies need to be conducted to determine the effectiveness of sitemaps.

The purpose of this study was to determine the effectiveness of using sitemap on user performance to achieve their goal. The hypothesis is that the use of sitemaps may help users to find their goals.

II. METHODOLOGY

A survey was conducted on 5th - 9th October 2009 with 20 graduate students on Institut Teknologi Adhi Tama Surabaya who took part the test for examining the hypotheses of the research project.

Two parts of survey had to be conducted by participants. There are ten females and ten males aged 19 – 24 years old were involved in this survey. In first phase, users were asked to find specific information in a web site by starting from one of two pages—the site's home page or its sitemap. Two different web sites had been chosen based on similarity on size and type of organization, which are Caltex Australia Oil Company (<http://www.caltex.com.au>) and Bp Australia Oil Company (<http://www.bp.com.au>). Users were given approximately one minute to get used to navigate the websites. Then there were three tasks that have to be done by the participants with two steps for each task. First, it began from the main page of the website and second, it started from the sitemap page. For each question, the number of mouse's click it took to complete the task was counted.

After answering all three questions from each website, the users moved to the second phase. There were 9 questions in the questionnaire that had to be filled by each user. The first two questions was general information about the user which are their gender and age. The knowledge and experience about sitemap would be the next questions. Then the participants were asked about their satisfaction questionnaire about

the task which has been done previously in first phase such as the easily to navigate and find the information instead it is easy to get lost. Finally, the effectiveness of using sitemap was investigated from the students. Next, the questionnaires were collected, collated and analysed in order to summarize the overall results.

III. RESULT

From the survey which had already taken by UWS postgraduate students, the results were obtained and shown in graphs which can be seen below.

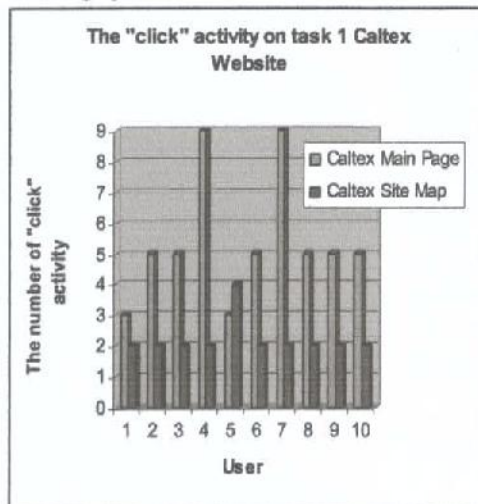


Figure 1. The "click" activity on task 1 at Caltex Website

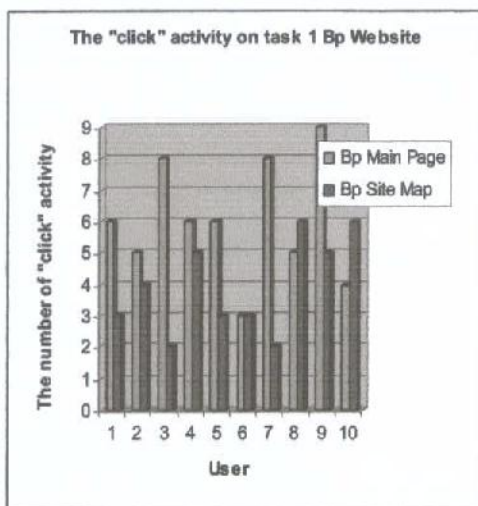


Figure 2. The "click" activity on task 1 at Bp Website

Figure 1 to 6 shows the comparison of the use of sitemap and does not use of sitemap to find the information which is asked in the survey's task. As can be seen in the graphs, almost 90% students found

the information faster by using sitemap as the guidance rather than without using sitemap.

In task 1, 90% students found the quickest way to find the information in the Caltex Website using sitemap by only perform two click activities. On the other hand, 60% students execute five clicks when try to locate the answer by starting from Caltex main page and 20% try a slight hard by carry out nine attempts. In Bp Website, 50% participants need less than four click activities and only 20% do the searching up to five efforts while using sitemap. In contrast, more than 50% students do more than six attempts when try to trace the information from the main page.

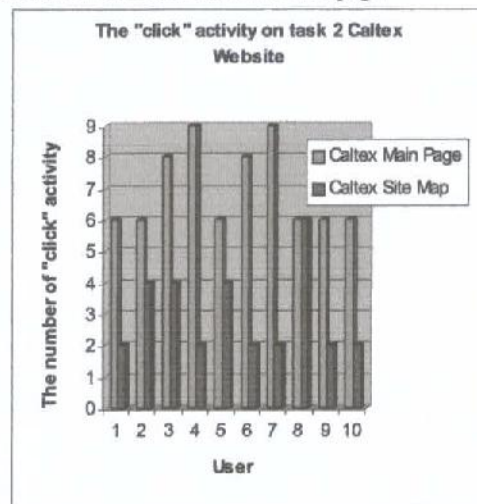


Figure 3. The "click" activity on task 2 at Caltex Website

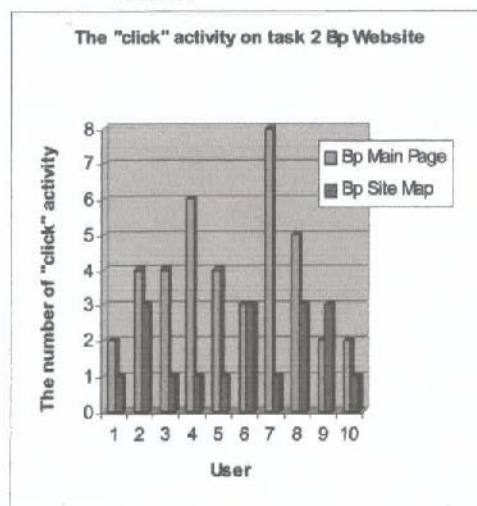


Figure 4. The "click" activity on task 2 at Bp Website

While perform the searching in task 2 using the sitemaps, half students figure the answer by only doing less than three click activities in both Caltex and Bp Websites. On the contrary, it needs more than six attempts to figure out the information without using

sitemaps. It is done by 60% participants. The same pattern is also occurred in task 3. The number of students who are not using sitemap and perform more than five click activities is almost double than the number of students who are using sitemap and only execute less than 3 attempts.

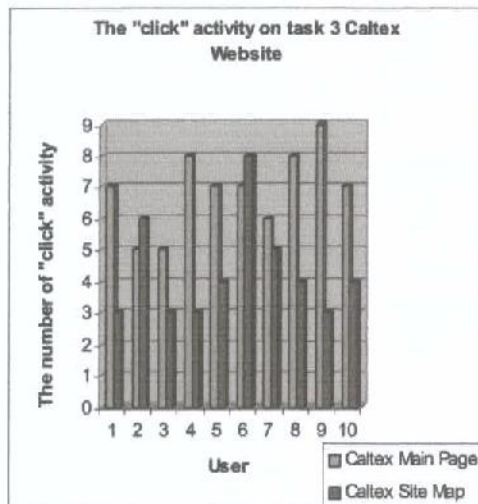


Figure 5. The "click" activity on task 3 at Caltex Website

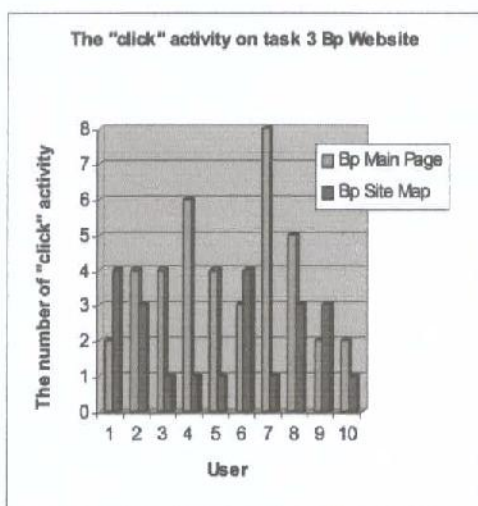


Figure 6. The "click" activity on task 3 at Bp Website

After the survey's tasks had been conducted, the participants were asked to fill the questionnaire regarding their familiarity about sitemap and feedback about the task that had just been performed. As can be seen in figure 7, the students were asked whether they know what the sitemap is and the result is 60% students recognize the sitemap. Nevertheless, the rest did not know the meaning of sitemap.

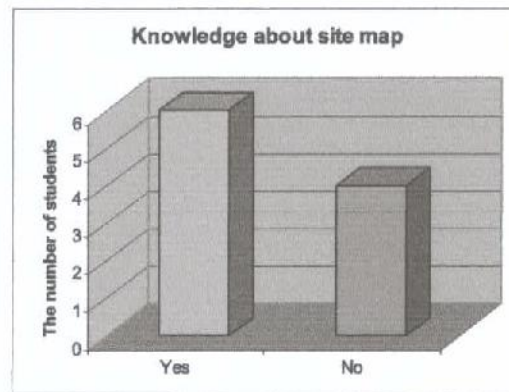


Figure 7. The understanding of sitemap

Then the familiarity of using sitemap by students is questioned whether how many times they have used sitemap specially when got lost. The reality is 80% students have never used the sitemap and only 20% students have ever applied less than five times when they got lost as it is shown in figure 8. Most of students admitted that those two websites are difficult to navigate when they come for the first time. Moreover, 60% participants acknowledge that the sites are also easy to get lost because the complexity on organization's structure.

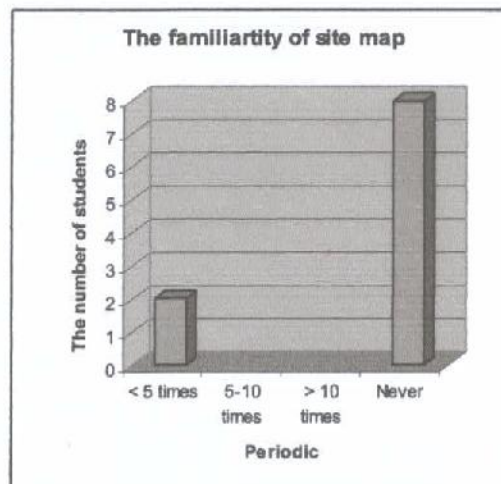


Figure 8. The familiarity of sitemap

The next question which was asked to the participants was how easy to find information in those two websites with using sitemap facility and without using it. The result is 80% students confess that the information are easier to find with using sitemap and more than half student was having difficulties in finding the information without using sitemap.

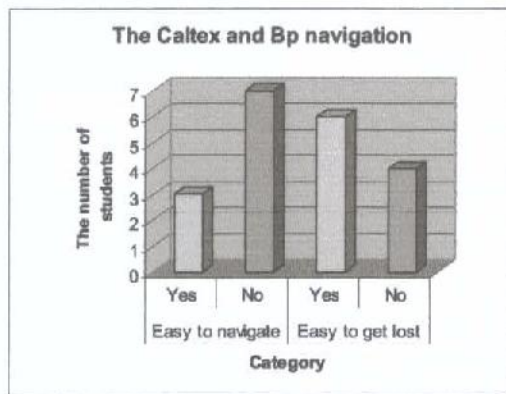


Figure 9. Caltex and Bp website navigation

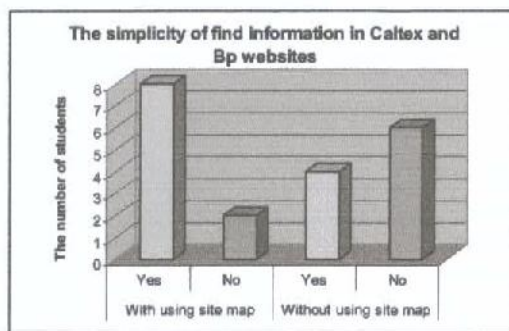


Figure 10. The simplicity of find information in Caltex and Bp websites

Finally, in the last question, the effectiveness of using sitemap is explored from the students. As can be seen in the graph on figure 11, 80% students discover that sitemap is very effective when navigating the websites specially if they get lost or do not have any hint where they are now.

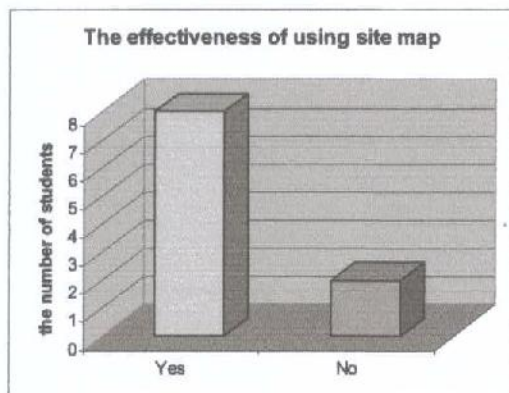


Figure 11. The effectiveness of sitemap

IV. DISCUSSION

As can be seen in the results, the hypothesis was supported which sitemap can improve performance in an information-searching task.

Most students were more success and faster in finding the information which was given in survey's tasks by using sitemap facility. However, there were also some students which did faster in finishing the task without using sitemap facility. It is probably because the tasks which are easier to locate without using sitemap, are clearly defined what category they belong to. For example, the task about finding information in relation to the location of Bp superwash in NSW, it is obviously distinct that the task is located under "location" category. On the other hand, when the sitemap is very usable, it could be because there are no clear groups whether the task is in the right place or not if the students start navigating from the main page. Another finding was found that the students have difficulties in navigating the two Australia Oil Company websites when the five-minute time to familiarize the website was given. Moreover, the easier to get lost when exploring the website was also be problem to the participants. It also effected in finding the answers for given tasks. Most students wrote that it is more difficult to find the answer by starting from the main page than the sitemap page. It could be because the respondents just visited the sites for the first time and it also be influenced by the size and complexity of those websites.

The interested finding was found when the participants were asked whether they know what the sitemap is, 60% students admitted that they recognize the sitemap. Moreover, only 20% of them have ever explored the sitemap when they got lost and it only be visited for less than 5 times for each of them. On the other hand, 80% students had never applied it which was asked in the next question. The possible reason why they know about the sitemap is because university and other related websites with their education such as journal and library mostly have sitemap. It is also big and famous companies or websites have already begun starting to implement sitemap. Nevertheless, because of their familiarity of those websites, the needs of using sitemap as their guide are avoided. In addition, according survey to 400 websites, almost half (46%) of it did not have any sitemap at all (Bernard, 1999).

Most respondents admitted that the sitemap is very useful and effective. It can be seen in the graph in the result section, almost all students (80%) agree that the sitemap helped them when finishing the tasks. One possible solution is because the participants found the correct answers more often, required less time, visited significantly fewer web pages, and required fewer clicks to complete the task when the sitemap was used.

As it has seen, these results show that the use of sitemaps may help users reduce their sense of lostness. The effectiveness of using the sitemaps can provide a

quick and easy way for users to move around a site, and it provide in-depth information about the content and structure of the site. As more sites adopt it, users will become more familiar with their benefits and make use of it as a navigational tool within a site. The most important things when a sitemap is needed are it should be easy to understand and make sure the structure is very clear and accurate. Moreover it also has to focus on revealing the part which is may hard to find in main page.

The limitation of respondent can be seen from this study. For future research, the number of samples should be increased in order to obtain an accurate result. Additional research needs to be done to demonstrate the true benefit of sitemaps. For example the current trend of sitemap and also the best form of sitemap whether it is graphical maps or text-based map.

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