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A Review of the Usability Aspects of Common Web Page Design Paradigms

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ABSTRACT

This project is to define and determine the common design paradigm used when designing a Web page, which is based on the fundamentals principles of UI design. The outcome will be more focused on the success and its benefit of this paradigm in designing a Web page. It also will answer the question how effective and usable the paradigm when designing a Web page so that user can retrieve information or surfing the Website more efficient. As computer technology is being changed, the web design paradigm would change as well. Thus, it will be more interesting if future study could be done to identify new paradigm in designing a Web site.

Keywords: *web design paradigm, UI, usable, Web page.*

Introduction

Nowadays, website application is rapidly being used for all kinds of task, parallel with computer software application. People use website to search information; surf on the net to get latest news or to get work done. People intend to go to the same website because the website might have a useful information, good layout, or easy to access and navigate.

Web Usability Issues

UsableNet, Inc has defined that Website usability is determined by *user satisfaction, ease of learning*, user's ability to *remember* its organization and functionalities, *user effectiveness, efficiency* and *likelihood of errors* while performing the tasks the site has been designed for. One of the major usable guideline that designers should follow is *Do the same as everybody else*: if most big websites do something in a certain way, then follow along since users will expect things to work the same on your site. So it is useful to have familiar features or layout same with other Website for same purpose as user do not want to spent a lot of time to re-learn new features Finally, it is important to have usability features in any computer application because application that do not perform up to user's needs and expectations usually fail (Pearrow 2000).

Web Popularity

When more users go and use the same website, the website becomes more popular and well known. As mentioned above (Introduction section), people intend to go to the same website because the website might have a useful information, good layout, or easy to access and navigate. One more thing is because user might type a keyword in a search engine and search engine will display all URL that match with the keyword. The displayed URL will lead users to visit their website automatically. There is several ways to determine the popularity of a websites.

i.   Hits
ii. Unique Visitor
ii. User Ranking and Rating
iii. Link Popularity

Web Design Paradigm

Derived from the Greek, for 'pattern' a paradigm can best be defined as "a basic theory or conceptual framework, within which (scientific) theories are constructed" (Walton 2000).

The paradigm is emphasized on home page because it acts as a logical point of entry into the system of Website. In hierarchical organizations, the home page sits at the top of the chart, and all pages in the Website should contain a direct link back to the home page. It is the most visited page of the Website and can perform a variety of functions therefore it should have high visibility (Horton 1999).

The advantages of having high visibility of the home page are because most Website put their latest news, information, products or services on home page. Another reason is searching dialog box. New users might want search a product or services via homepage in the Website because this would be a new experiences for her or him. Or maybe the users forget the specific address of the web page that he or she wants to visit.

Last but not least, the menu of links or table of contents for the Website. It is common for each and every Website to put the links and table of contents on homepage. Navigation schemes in Website that use the homepage for news and menu listings are often centered around the home page, using it as a home base for most navigation through the Website.

There is several web design paradigm applied in current website.

i.   News-Oriented Paradigm
ii.   Path-Based Paradigm
iii. Text-Oriented and Graphic-Oriented Paradigm
iv.   Splash Screen Paradigm
v.   Weblogs Paradigm

Web Usability Testing

The testing was based on 10 usability guidelines suggested by Nielsen (1999) as showed in Table 1. 100 lists of URL have been selected according to their link popularity. All lists were analyzed using Link Popularity Check 2.1 freeware program on 6 May 2003 & 7 May 2003. These URL were collected where the results were from 500,000 and above.

For each guideline identified in the Website homepage will be recorded in the web usability evaluation form. From Figure 1, it was found that 4% of the analyzed websites have less than half of the guidelines. Those websites have 2 or 3 of the guidelines. It is also found that 89% have more than half of the guidelines. Only 7% of the websites did well and have all the usable features.

Overall result for Web Usability
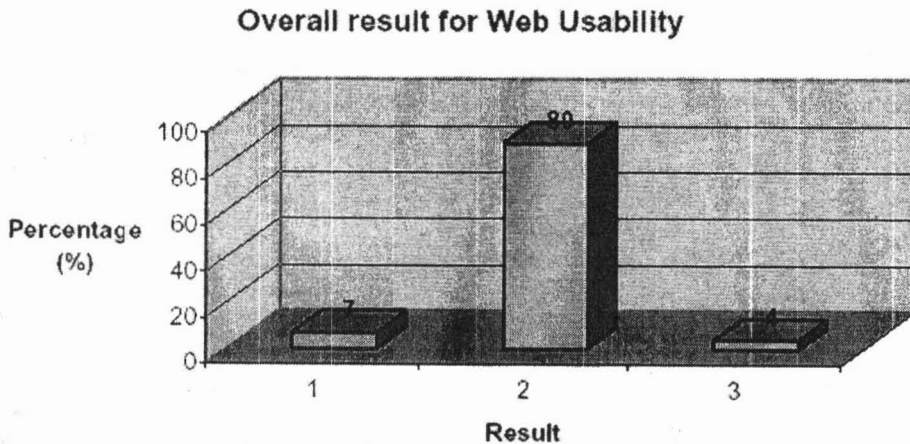
Result:
1 – Has 100% usable guidelines
2 – Has >= 50% usable guidelines
3 – Has < 50% usable guidelines

Fig.1 : Overall result for Web Usability

For more details, a result for each guideline was indicated in Figure 2. According to the graph, 100% of the websites have logo and name on the website home page and this logo should not be a link. However, 65% of the websites from this result have link on their home page logo.

Table 1 : 10 Good Deeds In Web Design (Jakob Nielsen's Alertbox, October 3, 1999)

Guideline 1	Place your name and logo on every page and make the logo a link to
Guideline 2	Provide search if the site has more than 100 pages
Guideline 3	Write straightforward and simple headlines and page titles that clearly explain what the page is about and that will make sense when read
Guideline 4	Structure the page to facilitate scanning and help users ignore large chunks of the page in a single glance.
Guideline 5	Instead of cramming everything about a product or topic into a single, infinite page, use hypertext to structure the content space into a starting page that provides an overview and several secondary pages that each focus on a specific topic. The goal is to allow users to avoid wasting time on those subtopics that don't concern them.
Guideline 6	Use product photos, but avoid cluttered and bloated product family pages with lots of photos.
Guideline 7	Use relevance-enhanced image reduction when preparing small photos and images
Guideline 8	Use link titles to provide users with a preview of where each link will take them, *before* they have clicked on it.
Guideline 9	Ensure that all important pages are accessible for users with disabili-
Guideline 10	Do the same as everybody else

Web Usability Result

Guidelines:
1 – Name & Logo
  Has link on logo
  No link on logo
2 – Search
3 – Headlines & Page Titles
  Use 'Welcome'
  Use website name

4 – Structure
5 – Hypertext
6 – Product Photos
7 – Image Reduction
8 – Link Titles
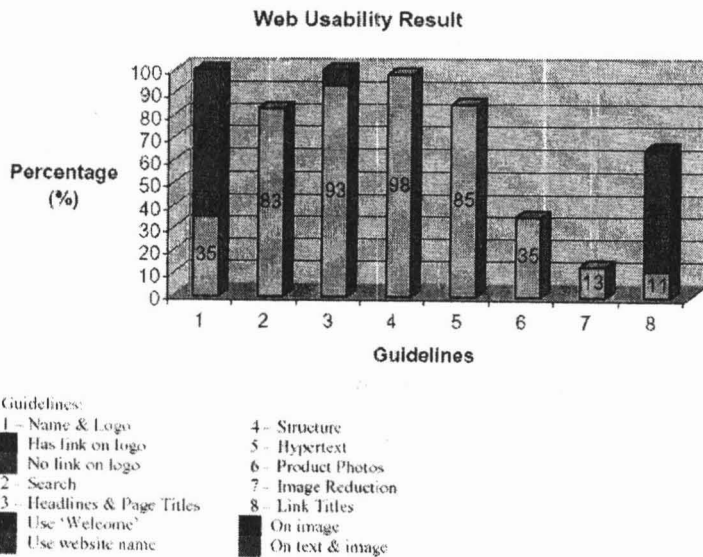 On image
  On text & image

Fig. 2 : Web usability Result for each guideline

From Figure 2, it is found that 83% of the websites have search dialog box on website home page and 17% did not have this tool in their home page. It is also found that 100% of the websites have included page title and headlines. The guideline should use simple and straightforward headlines or page title but only 7% of the websites have used welcome as a first word for page title.

98% of the websites have put the information and menu in well structured and organized. The graph also indicates that 85% of the websites have used hypertext in the paragraph.

For guideline 6, only 35% of the websites display a real photo of their product on the website home page and display product information when photo is being clicked. In order to save a space and decrease the loading process of the website, 13% of the websites provide image reduction rather than put the original size of the image.

Guideline 8 proposed that links should display a title or brief description and from the graph, 65% of the websites followed this guideline. From this result, 11% of the websites have link title on both text and image/icon. However, 54% has link title on image only. Unfortunately, 35% website did not put a link title either on both text and image/icon or image.

Discussion and Recommendation

According to the results obtained from this usability testing, there were only 7% of the analyzed websites followed all the guidelines suggested by Nielson. The examples of the website are eBay.com. The site is the world's online market where user can buy or sell anything from anywhere through eBay.com. On the other hand, it was found that pathfinder.com home page has only 25% of the usable features. It is the worst website found from the testing.

Conclusions

As conclusion based on the overall Web Usability result, most popular website has placed usable guidelines suggested by Nielson (1999) on their homepage website. The guidelines is recommended to all website which can increase the usability rather than having only general and traditional style guides such as signature, date stamp, file size, text size and type, background color, page layout, etc.

It was obviously that commercial website have more usable guidelines as they are going to attract more users to come and visit their website. This was why those commercial website has more percentage than other website.

Although commercial website has more potential to be more usable like Amazon or eBay, website for other purpose could become a usable website if they follow other usable guidelines that suitable for their website goals. For example like W3C website or Google search engine. Those website are well known and has high visitor everyday. Therefore, it can be concluded that the number of appearance usability on each popular website are based on the website main goals. Finally, it can be concluded that the popularity of a website is related to the web usability.

Limitations and Recommendations

One major limitations found in this dissertation was to select a popular website. It was hard to determine and identify the most popular website on the Net. Therefore, for further study, it is recommended that the sample must truly popular website so that the result will be more accurate and efficient; It is recommended that for further study, it should have more sample website to be evaluated so the result could more efficient. It is also recommended that the usability testing could be done automatically like testing the web accessibility using Bobby. The result would be more accurate and valid.

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