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Improving Usability of E-recruitment Website:
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Abstract

*Presently, most organisations are already using e-recruitment to post jobs and accept resumes online where they also correspond with the applicants through e-mail. This paper proposes a framework for evaluating usability performance of e-recruitment websites. The evaluation mainly focuses on the Sarawak Government e-recruitment website
(e-recruitment.gov.my). The usability criteria such as navigation that include hyperlinks, length of page, search engine and user location indication were assessed. Under page layout criteria, usage of colours and images, consistency and attractiveness were evaluated. The results found that these criteria are the key determinants of a successful e-recruitment website. Since e-recruitment surpasses the traditional employees hiring methods, usability of the e-recruitment websites is vital to facilitate users in finding jobs effectively and efficiently.*

Keywords: Usability, E-Recruitment, Usability Evaluation, Page Layout, Navigation

1. Introduction

The number of Internet users worldwide is predicted to reach 750 million by 2008 (Turban and King 2003). This tremendous growth has led to the adoption of e-recruitment system among organizations across the world. E-recruitment is defined as the utilisation of the Internet for candidate sourcing, selection, communication and management throughout the recruitment process (Hoffman 2001). A research found that a usable e-recruiting system reduces the hiring time by two-thirds and lowers costs by 90%. This finding is significant since e-recruitment is much cheaper than the traditional one. Job applications that can be processed and delivered within minutes saves job seekers and employers time. In this research we were just focusing on the Sarawak Government online job application system. We also developed a guideline for better, usable e-recruitment website.

2. Study Background

2.1 The Importance of Usability

Having a usable website is a prerequisite for web survival. The quality of website is relative to its usability. There are several examples of studies on website usability testing

(Brink et al. 2002; Palmer 2002; Becker and Mottay 2001; Nielsen 1996). Usability is defined as the extent to which product can be used by specified users to achieve goals with effectiveness, efficiency and satisfaction in a specified context of use. Usability also related to user friendliness (Misic 1999). It is primarily about content layout and classification (Cho 2001), structure, user interface, appearance and visual design, intuitiveness, readability, search facilities, and ease of navigation (Yang et al. 2005). Usability is to ensure that interactive products are easy to learn, effective to use and enjoyable from the user's perspective (Lazar and Preece 2002). Hence, usability is extremely vital for a website.

The number of Internet users in the world is growing fast. The migration from paper-based services to electronic version has wide-open the potential of e-government application to provide fast and convenience services to the user. The application of e-government includes employees' recruitment. However, badly designed e-recruitment systems prevent job seekers from applying for job online. It is essential that these systems are barrier free. Therefore, usability testing is an important research area.

2.2 E-recruitment Websites

E-recruitment is becoming increasingly popular worldwide as well as in Malaysia. There are several examples of existing e-recruitment tools in Malaysia that can be used by the job seekers to look for jobs online. The lists of sites are shown in table 1. However, many Malaysian e-recruitment sites have usability problems. If the sites are not usable, they may lose their visitors.

Agency/Owner	URL
Sarawak Government	www.e-recruitment.gov.my
Malaysian Institute of Architects	www.pam.org.my/erecruite.asp
103jobs.com Sdn. Bhd.	www.103jobs.com
Agensi Pekerjaan MatchLink Sdn. Bhd.	www.matchlink.com.my
Gemini Personnel Services Sdn. Bhd.	www.jaring.my/gemini
Agensi Pekerjaan Gemayan Sdn. Bhd.	www.gemayan.com
Speecomaju Sdn. Bhd.	www.Speecomjobs.com

Table 1: Example of e-recruitment sites in Malaysia

3. Evaluation Methodology

3.1 Demographics

Five (3 female, 2 male) Human-Computer Interaction (HCI) experts from Universiti Malaysia Sarawak were selected for the usability evaluation. The small group of HCI experts had at least a background in Human Computer Interaction. Their age ranged between 25 to 29 years old. They use Internet in an average of 21 hours per week equivalent to 3 hours per day The evaluation is performed by having each individual expert inspect the interface alone. Upon the completion of all evaluations the experts are

allowed to communicate and have their findings aggregated. The reason for this is to ensure independent and unbiased evaluations from each evaluator. The use of five evaluators is reasonable, but certainly at least three (Nielsen 1994). This research evaluates the perception of those experts who are responsible to explore the system, identify problems and classify it as violation of one or more heuristics.

3.2 Criteria and Indicators

The navigation facilitates the movement from one page to another (Nielsen, 2000). In addition, he also clarifies that the navigation interfaces should answer three fundamental questions that include where am I, where have I been and where can I go. The navigational involves a variety of features such as the operation and position of hyperlinks, page length and the effectiveness of the search engine. As an indication of user location, we also need to look at the guidelines to provide information on how to facilitate users to move around within the web site. For instance, the use of breadcrumb trails. According to a number of researchers, the breadcrumb trails should be presented in the website so that the users know where they are and how to get the information correctly (Bowler et al. 2001).

The page layout is the way on how the information and products are presented with the use of colours, images graphics and images or media, consistency and attractiveness. The significance of design features will influence the users' perception of the web site. Consistency is one of the most powerful usability principles. When things always behave the same users do not have to worry about what will happen (Nielsen 2000). Instead they know what will happen based on earlier experience. For an attractive display, it may have an effect on website popularity. However, the appearance of the images should match with the user's needs and design feature that they expect. For instance, image of crying baby is inappropriate for e-recruitment website. The indicators and its description are summarized in table 2.

Evaluation Criteria	Usability Indicators	Description
Navigation	Search Engine	Use effective keyword search.
	Length of Pages	Keep the content short.
	Hyperlinks	All hyperlinks are working.
	Location Indication	Use breadcrumbs (Bowler et al. 2001).
Page Layout	Use of Colours	Not more than four colours per page.
	Use of images	Not more than three images per pages.
	Consistency	Objects location is always the same.
	Attractiveness	Images match user's expectation.

Table 2: Criteria of Usability Indicators

4. Case Study on e-recruitment.gov.my

The e-recruitment website is one of the online services provided by the Sarawak Government. The website is provides an easy way to search and apply for vacancies in the Sarawak State Government. It allows submission and updates the application, personal details and qualification on-line, anywhere, anytime. Interestingly, any notification is sent immediately via e-mail and/or Short Messaging Service (SMS). Applicants can view application status and interview details online.

5. Results and Recommendations

In an effort to further identify usability problems, comments were solicited from the inspectors who are responsible to find if there are violations towards the usability principles.

"Why there is no indication to show how to find the job. I'm not given any guidelines to do the search"

One of the experts commented on the ineffectiveness of the search engine. The search engine does not provide any option for job category search. Indeed, it is very limited where the jobseekers are given a text box to key in any job keyword without showing guidance to do the search.

"I cannot find my intended job on the website. The number of characters is too limited. There is no classification of job, I have no idea how to go about this."

Moreover, the search engine is limited keyword availability. It limits the description to 15 characters only. Therefore, the job keyword such as "Information System Officer" cannot be found from the website because the number of characters has exceeded the requirement. There is no instructions or hint to highlight what type of job category is available on the page. As a result, the jobseeker that has very little idea about the site would promptly type any words, which probably leads to an unsatisfactory response such as "no record found".

"I have no time to read the whole page. Such a long page"

The page length of the text also becomes an issue. The contents of e-recruitment page are too wordy without any navigation button to return to the original part. See figure 1, "A". The users have to scroll up once they have finished reading the contents. According to Nielsen, a wall of text is deadly for an interactive experience, which is painful, intimidating and boring to read. In the e-recruitment website, it has clearly shown that all

critical contents are placed on the bottom part of the page. Hence, the critical information is visible on the screen when a page comes up.

"It is very confusing, when I click on "akaun e-recruitment", it doesn't link me to a new page. Then I realized it is just a topic", " every time I click on "Cari jawatan", there is no new page appears."

One of the evaluator expressed dissatisfaction with the hyperlink used. There are no broken hyperlinks in the website. All the links are working properly. However, the formatting style used for topic (title) is similar to a format style of hyperlink. See figure 1, "B". Consequently, this has led to confusion to the users who initially thought that it was a hyperlink.

"Where I am now? I think I always on the main page"

The other issue has been revealed is the indication status of the user. The complaint received about her current location while surfing the website. The e-recruitment website indeed does not present any breadcrumb trails on the website. It becomes problematic if the users have passed through many processes (link to sub categories of information along a continuum of sequential order) but have no idea where have they been? If the breadcrumb navigation list is not presented, it makes users hardly recognize where they are on particular site and where they can go later.

"There are too many colours on the main page. I can see blue, dark blue, light blue, dark green, light green, grey, light grey", "hard for me to differentiate the purpose for each colour",

"I think if people with colour blindness must face trouble in reading the website because they confuse with particular colour if I'm not mistaken"

The layout for each page is consistent with the colour usage. But it contains more than four colours in one page, which can be considered as too crowded, and a lot of confusion people with colour blindness to recognise and differentiate the colours. A person with colour deficiency could only see four colours bands (yellow-orange, grey, blue and violet). For them, blue-green and red-purples shades can be confused with grey, while yellow, brown and green may be confused for each other.

"During my study period about this website, I haven't seen any changes on the picture used, it doesn't encourage me to return to this website."
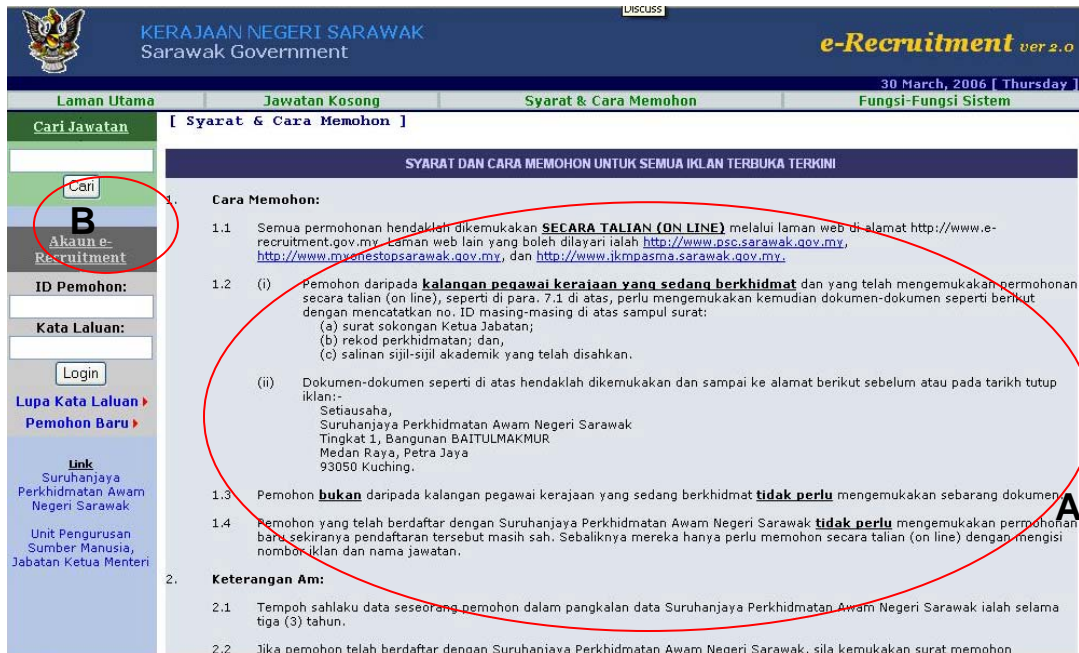
Figure 1. The main page of e-recruitment website

"The picture is being used is not attractive, very dull!"

A few of the evaluators revealed the picture issue. The pictures always not up to date. A highly credible website must concentrate on improving the look of site (Fogg et al. 2003). The shown image at the main page is not attractive to encourage the user to keep on staying. Attractiveness is resulted from matching what user need from website and the design that they expect (Van Duyne 2002).

As a recommendation, for navigation criteria the search engine should provide clear instruction, guideline or hint because users may not be familiar with computer terminology. The search engine should not hurt everybody particularly for elderly users. In the future, the search engine should increase the characters limitation. To keep users staying on using the search, the search engine must be able to handle hyphens (space) such as "General Clerk" and other variants of the query terms.

In terms of length of pages, e-recruitment website should keep the contents as short as possible. Research has shown that people resist reading a lot of text from computer screen (Nielsen 2000). Moreover, Nielsen points out write for online not print by using well documented tricks such as subheads, bulleted lists, highlighted keywords, short paragraphs and a simple writing style (Nielsen 2000). To improve user navigation in the website, it is better if they can facilitate user by adding breadcrumbs trail instead of using menu or button such as back button. In addition, all critical content should be on the top part of the page.

For improvement, we suggest for page layout criteria, they should reconsider the colours, images, and attractiveness of the website. The irrelevant images should be removed from the page content and need to be replaced with appropriate one.

Usage of colour must be four or less and images should not more than three. Too many colours cause confusion to the user. Usage of appropriate images leads to site attractiveness. Sometimes the designers exclude the needs of people with colour blindness. People with such disadvantage may find it difficult to describe colours correctly. The developers should define specific requirements for those who are unable to distinguish certain shade. This issue can be considered as serious where it disrupts many tasks during the surfing process (Karagol 2001). A research found that around 10% of the population has unusual colour vision where they do not see the same range of red-green and small percentage of the blue-yellow colour (Stone 2004). The two-phases framework is shown in Figure 2. Phase 1 represents the criteria for evaluation while phase 2 consist of the suggestion for usability improvements.
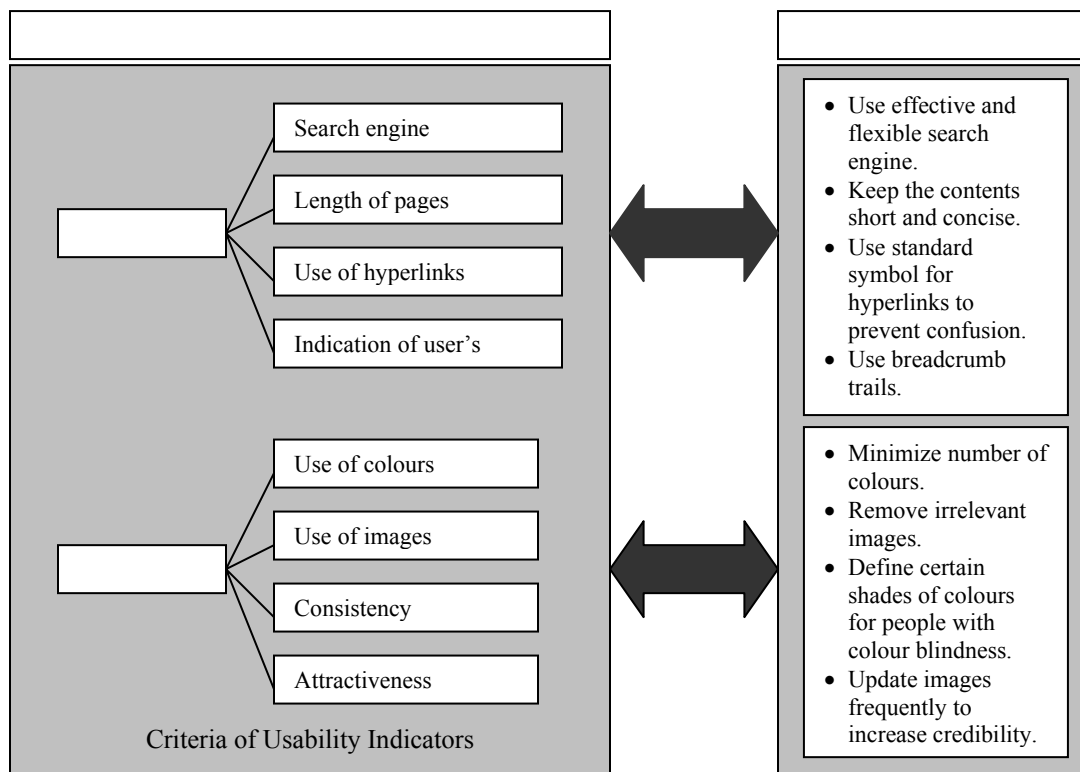
Search engine

Length of pages

Use of hyperlinks

Indication of user's

- Use effective and flexible search engine.
- Keep the contents short and concise.
- Use standard symbol for hyperlinks to prevent confusion.
- Use breadcrumb trails.

Use of colours

Use of images

Consistency

Attractiveness

Criteria of Usability Indicators

- Minimize number of colours.
- Remove irrelevant images.
- Define certain shades of colours for people with colour blindness.
- Update images frequently to increase credibility.

Figure 2. A framework of usability evaluation on e-recruitment website

6. Conclusion and Future Works

The use of e-recruitment facilitates the recruitment process by advertising jobs or contact applicants electronically. The usable websites are needed to help online job seekers to find job effectively and efficiently. The study was using the Sarawak Government website as subject of the evaluation. Navigation and page layout were used as the main criteria of the evaluation. A group of HCI experts have been chosen for the usability evaluation. A framework of usable e-recruitment website has been produced as a guideline.

Other usability factors such as website structure, user interface, website appearance, visual design, intuitiveness and readability have not been explored yet in this study. The paper only discusses about navigation and page layout. In the future, the number of HCI experts should be increased during the usability evaluation. Besides HCI experts, the usability evaluation can be performed from surveying representative end-users (actual users) in the future. The usability evaluation may highlight what are the peculiarities of government recruitment as opposed to the private companies. The research may look towards on these issues as well.

7. Acknowledgement

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