Global Journal of Computer Science and Technology
Volume 12 Issue 7 Version 1.0 April 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 0975-4172 & Print ISSN: 0975-4350

Search-Ability a Domain Quality Factor for Web Software Applications

By B. Narayana Babu & C.S. Ramanathan
Sri Sankara Arts and Science College, Kanchipuram, India

Abstract - As organizations become aware of the strategic importance of e-commerce they will also become aware of the need of quality Web sites. In early years the World Wide Web was originally designed to present information to Web surfers using simple sites that consists of hyper linked text. But, Modern Web applications run large-scale software applications for e-commerce, information distribution, entertainment, and numerous other activities. The factors that constitute software quality in traditional data processing are well defined. However, it is necessary to have a full understanding about the quality in the context of World Wide Web. This paper identifies a new quality factor, searchability for the World Wide Web with the checklist of enablers. This factor enables the Web site developers and evaluators to create quality Web sites.

Keywords : *World Wide Web, Internet, quality factor, searchability, checklist of enablers.*

GJCST Classification: *H.3.5*

Strictly as per the compliance and regulations of:

Search-Ability a Domain Quality Factor for Web Software Applications

B. Narayana Babu [α] & C.S. Ramanathan [σ]

Abstract - As organizations become aware of the strategic importance of e-commerce they will also become aware of the need of quality Web sites. In early years the World Wide Web was originally designed to present information to Web surfers using simple sites that consists of hyper linked text. But, Modern Web applications run large-scale software applications for e-commerce, information distribution, entertainment, and numerous other activities. The factors that constitute software quality in traditional data processing are well defined. However, it is necessary to have a full understanding about the quality in the context of World Wide Web. This paper identifies a new quality factor, *searchability* for the World Wide Web with the checklist of enablers. This factor enables the Web site developers and evaluators to create quality Web sites.

Keywords : World Wide Web, Internet, quality factor, searchability, checklist of enablers.

I. Introduction

The World Wide Web was originally designed to present information to Web surfers using simple sites that consist of hyper linked text documents. According to Bevan [BEV98] "Web sites provide a unique opportunity for inexperienced information providers to create a new generation of difficult to use systems". Modern Web applications consists of diverse components including traditional and non traditional software's, interpreted scripting languages, plain HTML files, mixtures of HTML and programs, databases, graphical images, sounds and complex user interfaces. Most of these Web sites are developed by enthusiastic beginners. They have the perception that, a *quality* site is one that demonstrates the latest multimedia and animation effects. As the result the site has been difficult to read, find, navigate and takes long time to load.

As such, engineering an effective Website requires large teams of people with very diverse skills and backgrounds. These teams include programmers, graphic designers, usability engineers, information layout specialists, data communications and network experts, and database administrators [ELI02].

Several factors inherent to Web development contribute to the quality problem. Developers build Web-based software systems by integrating numerous diverse components from disparate sources, including custom-built, special-purpose applications, customized off-the-shelf software components, and third-party products. In such an environment, systems designers choose from the potentially numerous components and they need information about the various components' suitability to make informed decisions about the software's required quality attributes.

Author α σ : Assistance Professor, Department of Computer science Sri Sankara Arts and Science College, Kanchipuram, India.
E-mail α : nbslnc@yahoo.com
E-mail σ : tpt_auctc@yahoo.co.in

II. Searchability – A Domain Quality Factor for Web Applications

As new domains evolve and are understood there is a need to review our interpretation of quality in those new domains [RON00] [JEF02].

a) Searchability

The majority of traffic to meet Web sites comes through the major search engines and directories. The NUA analysis 2010, states the importance of search engines by noting that 55% of Internet shoppers made purchase at sites they found through the major search engines and only 9% who bought at sites found through banner ads [ROB02]. So, our site must be identifiable by the search engines and visitors. In order to do that we must submit our page using a handy submission service or a software program that will submit pages to more search engines.

b) Search Engines

The search engines allow the users to find pages on our site related to a specific keyword or phrase. When we submitting a Web site to the search engines the search engine look at each page of a Web site separately from the other pages, each page stands on its own. Which means that each and individual page of your Web site has its own value according to the Search engines. So, each individual page needs to be optimized separately when working with search engines. To optimize means to create tags and texts in accordance with a particular search engine's unique likes and dislikes, in an attempt to get your site placed higher in the rankings of that engine. So, your tags, such as <TITLE>, <META description>, <ALT>, and so forth, will be designed for that one particular page whereas another page will have different tags and a different focus.

The search engines use *spiders* to index the Web pages. Spiders are sophisticated software

programs that crawl the Web. Index the sites, and build and index of Web pages that we access when we search. Web site owners submit their URL's to the engine, and a response, the engine send its spider to the pages to index them [ROB02].

When search engines crawl and spider Web pages, they also follow links from those Web pages, so they often index those pages as well. Therefore. You can see the importance of providing links to all your important Web pages on your main page. In our analysis we discuss the following search engines, with links to find the engines and strategies for better ranking.

- Google
- AltaVista
- Excite
- HotBot
- Lycos

The following table shows the ranking of web sites for the phrase "image compression".

Table 1. Top 10 Ranking of Web Sites in Each Search Engine for the Phrase "Image Compression"

Web Site	AltaVista	Excite	Google	Hotbot	Lycos
www.xat.com	1	1		1	
www.cs.dartmouth.edu		2	5	3	
www.bitjazz.com		3			3
www.faqs.org	5	4	1 & 2		1
www.cvisiontech.com		5			
www.c3.lanl.gov	2		3 & 4		
www.iterated.com					4
www.spinwave.com	7			2	
www.jeffdavis.net	3				
www.acm.org	4				
www.dip.ee.uct.ac.za				5	
www.debugmode.com					2
www.ricazip.com					5
www.Webreference.com				4	

Though, each search engine has it's own strategy and rules for ranking. We found the following checklists of enablers are common to all search engines.

Checklist of Enablers:

- ✓ The single important thing we can do in terms of search engine strategy is to choose the best keyword. Choose different keywords depending on the content of the page.
- ✓ Use keyword phrases rather than single keywords.
- ✓ Use all variations of your keyword phrase in the tags and text on your page. Because, some engines are case sensitive.
- ✓ Specify the keyword in bold in the body of the text.
- ✓ When deciding where to place your important keyword in your site, you also need to consider the page keyword weight. It refers to the number of keywords that appear on your page in relation to the total number of words in the page. A good general keyword weight is 3 to 5 percent of viewable text.
- ✓ Use the keyword phrase in the beginning of the tag.
- ✓ The most important tag on your page is <TITLE> tag. So, be sure to use the keyword phrase in the beginning of the tag.
- ✓ Move the <TITLE> tag to the beginning of the page.
- ✓ The <TITLE> tag's optimal number of characters is around 75 characters.
- ✓ The description tags optimal number of characters is around 128 characters.
- ✓ Use the keyword phrase in the Headline tags.
- ✓ Don't use ALL CAPS in the tags.
- ✓ Use <META> tag and specify the keywords and description attributes with the keyword phrase in it.
- ✓ Avoid the use of irrelevant <META> tags.
- ✓ Avoid the use of <META> refresh tag
- ✓ Specify the link with the related keyword of the page.
- ✓ Purchase Domain name for your Web site with relevant Keyword phrase on it.
- ✓ Name your page with the keyword phrase on it.
- ✓ Name image files and multi-media files with the keyword phrase on it.
- ✓ Use ALT attribute for images and specify the keyword phrase.
- ✓ Always use <NOFRAMES> version for the page containing <FRAMES>
- ✓ Use contact information in your Web site.
- ✓ Place a copyright notice on your page.
- ✓ Minimize the use of JavaScript code. Because, it can push your keyword containing text further down on the page.

- ✓ If you want to use the Java Script, move the JavaScript to a separate external .js file, and then reference that file in the <HEAD> section of your page.
- ✓ <SCRIPT LANGUAGE = "JavaScript" SRC = "namefile.js">
- ✓ </SCRIPT>.
- ✓ If you decide to use dynamic pages (i.e., the URL contains a '?' character), be aware that not every search engine spider crawls dynamic pages as well as static pages. It helps to keep the parameters short and the number of them small.
- ✓ Don't design pages that take more than 60 seconds to load.
- ✓ Minimize the use of image maps. Because it will push down your keyword containing text further down to the page.
- ✓ If you are using image maps, provide corresponding text link. It will help the search engine to find the text.
- ✓ Always link relevant sites.
- ✓ Add more content if the top ranking sites for that keyword phrase contain more than this page. Reduce the content if the competitor uses fewer words.

Characteristics for Searchability :

The following two characteristics support the *searchability* of the web site.

Trace-ability (Traceability) : It supports potential visitors by enabling them to find a Web site.

Accessibility : It supports the easy retrieval and the ease of access of the Web site.

III. Conclusion

This paper explains the manner in which Web sites are currently developed without reference to *quality* considerations. Also analyses the quality considerations for the Web sites and introduces new quality factor *searchability* with the checklist of enablers. This domain specific quality factor when combined with the core software quality factors can be used as an essential component for a quality accreditation system for Web sites. This paper also shows that as new domains evolve and are understood there is a need to review our interpretation of quality in those new domains.

References Références Referencias

1. [BEV98] Bevan. N and Macloed, "Usability Issues in Web Site Design", Proceeding's of UPA'98, Washington, 1998.
2. [ELI02] Elizabeth Hendricken and Martin Fowler, "The Software Engineering of Internet Software", IEEE Software, March/April 2002. pp 23,24.
3. [JEF02] Jeff Offut, "Quality Attributes of Web Software Applications", IEEE Software, March/April 2002. pp 25-32.
4. [ROB02] Robin Nobles and Kerri-Leigh Grady, "Web Site Analysis and Reporting", Prentice Hall India, New Delhi, 2002. pp 285,311,357,415,441.
5. [ROB03] Robert Hall, "Support for Web Service Developers", ORACLE Magazine, March/April 2003, pp 63,64.
6. [RON00] Ronan Fitzpatrick, "Interpreting Quality Factors for World Wide Web",

This page is intentionally left blank