Web Service Usability Analysis Based on User Preferences

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ABSTRACT

This article attempts to closely examine the users’ preferences in the author’s method of assessing the usability of websites. In particular, the issues bring a closer evaluation of websites by users. It sets rules for the accuracy of users’ preferences on the basis of the scoring method. In the considered problem of assessing the usability of websites the methods of decision support, logs, and user preferences on the basis of the scoring method were used. It should be noted that websites and user preferences change over time and usually vary during the design from the pages already available on the network. Website aging forces companies to conduct a new study on the usability of websites. This article presents an original method for usability analysis based on users’ preferences. The proposed method compares with other methods of usability of websites and conducts verification of this method on the basis of exemplary websites.

KEYWORDS

AHP, Decision Support Methods, ELECTRE I, Functionality, The Scoring Method, User Preferences, Utility, Website Logs, Websites

INTRODUCTION

Internet services are constantly subjected to actions aimed at adapting them to undergoing constant changes of users’ requirements. The dynamic development of the internet services market, as well as expanding range of services offered, increasingly forces companies to adapt web pages for their clients in terms of users. Precisely defined needs of each client (user) by company, increases the chance of maintaining him and getting the greatest possible profits. On the other hand, avoiding excessive fragmentation in characterizing different groups of internet users, as well as the loss of consistency in the strategy of dealing with customers requires new systemic solutions. This problem concerns especially virtual market. Editing internet services (Webmastering) is the art of designing and implementing construction (websites, web pages, presentations, and documents), which in addition to the utility also has an artistic value. The article focuses on the issue of the preferences of the users in the author’s method of web services usability. The appropriate tools represent this procedure, and the results obtained from the study are verified on actual data.

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Contribution and Motivations

The paper considered the problem of evaluating the usability of the websites is made concrete on the basis of: selecting appropriate criteria, determine their significance, selection decision support methods and users’ preferences. Websites user preferences are variable in time and is usually different from those included in the requirement form, applicable to the stage of creating the site. Once created website may lose its usability due to the variable needs of its users. Services aging process, development of software and hardware in computer science, development of civilization and technology, the flow of time, variable fashion, variable conditions related to users’ behavior, forcing the company to undertake new researches and develop new methods to evaluate the usability of websites.

The aim of the study is the usage of methods, which are based on current and future user preference; this is due to the fact that none of the methods need not necessarily to constitute a sufficient evaluation of the usability of service (historical evaluation of the log logs does not need to be in accordance with current user preference, while forecasted preferences generally exhibit little predictability). Article includes a study evaluation of the usability of website method. The problem of assessment is explained on the basis of the selection of appropriate criteria, determining its relevance and selection of appropriate multi-criteria method. Defining user preferences based on log logs enables using rough sets to select the relevant criteria in the analyzed structure of the decision problem.

LITERATURE REVIEW

In the literature, the authors attempt to formalize the methods for assessing different kinds of websites (Krug, 2014; Nielsen, 1999; Nielsen et al., 2012). Moreover, they create a number of organizations to study the wider usability of websites. In practice, there are two types of usability ratings: quality (subjective opinions) and quantitative (objective, measurable facts) (Cohen, 2003). Among the above-mentioned methods of evaluation and usability testing the basic methods is a test with users. It is used to examine how the users perform key for service, properly defined sets of tasks. Another method is online questionnaires, which are the most common tools for measurement. Most of the research methods are based on an online questionnaire as a collection of primary data (not yet gathered), and measuring the effects of marketing (Consulting, 2016). Research in the laboratory (user participation) is a technique of assessing the usefulness of websites, applications, devices, which involves the cooperation of representatives of the target group (users) (Symetria, 2016). Besides basic tools for research utilities, methods based on the so-called modern-technologies such as eyetracking and clictracking are used. These methods belong to the traffic analysis. Eyetracking is a tracking technology that clusters eyesight on a website or an application. Clictracking is a method used to track user website activity. It is a method that allows for the verification of the functionality of competing prototypes of the interface. It should be noted that a major impact on the credibility of the assessment of the usability of websites in the above-mentioned methods is to select a group of experts and their assessment. Baharat E. and S. Nitzan in their works provide the conditions to meet in order to obtain an appropriate assessment in the opinion experts. Different scoring rules can result in the selection of any of the competing experts, given the same preference profile (Baharad et al., 2006). D. G. Saari presents in his publications the methodology to assess the group character (Saari 2006, Saari, 2008). Bury H. and D. Wagner provide an extensive discussion D. G. Saari and draw attention to the difficulty in analyzing the results for a large number of objects (Bury et al., 2007).

The analysis methods show that the usefulness of websites varies with time, and no method for evaluating of the usability is reflecting the representation of time in the real description. In the about methods there are no time representation. Usefulness of websites is the subject in various reasons related to user behaviors that are accompanied by the interaction with the website (Weisong et al., 2009). Since this is an important factor that affects the activities performed during the websites conducted project, it must consider changing user preferences and aging of systems. For the
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