Design Solutions for Improving Website Quality and Effectiveness

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A volume in the Advances in Web Technologies and Engineering (AWTE) Book Series

Information Science
REFERENCE
An Imprint of IGI Global

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as to enable the web designer to develop high level of self-reflection. In this connection, this chapter introduces a series of assessment for learning strategies with self- and peer-assessment components for transforming a web developer into a reflective practitioner. Detailed implementation, its effectiveness and participants' opinions of the self- and peer-assessment strategy of a case study will be reported.

Today's internet technology has been utilized in various fields, *one of which is to* provide services in the field of education. Internet technology in the form of website enables organizations to provide anywhere anytime services to their customers, thus it is expected increasing customers' satisfaction. This research aims to develop a service design framework that can be used to evaluate the quality of website service at the university and formulate solutions for its improvement, by combining E-SERVQUAL, Kano Model, and Quality Function Deployment (QFD). To demonstrate the use of the proposed framework, we conducted a case study in one of the private universities in Palembang, Indonesia. Step by step of the framework usage is discussed, to provide a better understanding of the framework we are proposing.

The chapter introduces the definition of usability, usability assessment techniques to be adopted during the whole application life cycle for promoting usability. Then, the chapter includes design features for evaluating e-commerce websites such as navigation, content, design, ease of use and structure features and designing usable e-commerce websites. Then the chapter discussed the user testing method followed by a case study which comprises data collection by users' preferences, data analysis and the results. The latter in the chapter, we briefly describe the effectiveness of usability evaluation methods. Lastly, we describe the usability problem areas, strength and weaknesses on different features and sub-features of e-commerce websites followed by a conclusion.

The Semantic Web is a standard of Common Data Formats on WWW with aim to convert the current web data of unstructured and semi-structured documents into a common framework that allows data to be shared and reused across applications, enterprises. The main purpose of the Semantic Web is driving

the evolution of the current Web by enabling users to find, share, and combine information more easily. Humans are capable of using the Web to carry out tasks such as searching for the lowest price for a LAPTOP. However, machines cannot accomplish all of these tasks without human direction, because web pages are designed to be read by people, not machines. The semantic web is a vision of information that can be readily interpreted by machines, so machines can perform more of the tedious work involved in finding, combining, and acting upon information on the web. The chapter presents the architecture of semantic web, its challenging issues and also data quality principles. These principles provide a better decision making within organization and will maximize long term data integration and interoperability.

Section 2
Design Solutions for Web Usability

The primary objective of this chapter is to propose Biclustering Optimization Techniques (BOT) to identify the optimal web pages from web usage data. Bio-inspired optimization techniques like Firefly algorithm and its variant are used as optimization tool to generate optimal usage profile from the given web usage dataset. Finally, empirical study is conducted on the benchmark clickstream datasets like MSNBC, MSWEB and CTI and their results are analyzed to know the performance of the proposed biclustering optimization techniques with respect to optimization techniques available in the literature.

A Concern is any important property or area of interest of a system that can treat in a modular way. One of the most important Concerns is Usability which is considered one of the key principles in Software Engineering. The importance of Usability Evaluation has dramatically increased due to extremely fast growth in Internet technology. The websitedesign isdirectly relatedto the purpose of the website. Website with poor usability can easily destroy the purpose of website. So, the authors have chosen one of the concern "usability" which is the core component of web applications. The purpose of this chapter is to analysis and proposes an appropriate web usability metric for evaluation of universities website. The proposed method will be based partly on a literature study and partly on the survey analysis response by visitors.

that can be utilized to optimize web usage and to improve the quality of websites. It is used to improve the effectiveness of the website and for optimizing web usage to an extent. This chapter deals with how website quality can be improved using web analytics. The quality of website is evaluated using web analytics with respect to the website metrics that matters.

Chapter 11

Web plays an important role in running business organizations, governments, societies, education sector, scientific organizations, social networks etc. As soon as web application has been deployed into the production environment, some or all of its features are available to the users. Web analytics is used to understand the usage pattern and its behaviour of users. The Web analytics is a procedure of measuring, collecting, analyzing and reporting of Internet data to optimize the business processes and maximize their revenue. Web Analytics is processes of inspecting, analyzing, tracking, measuring and reporting of web data for the purpose of discovering useful information, understanding web site quality, assess and improve the effectiveness of a website.

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There is a remarkable association between an organization's analytics intricacy and its competitive enactment. The biggest problem to adopting analytics is the lack of knowledge of using it to improve business performance. A website is believed and considered as 'face' of the company. In present era, there are more than 200 million people who buy goods online across the globe. Business Analytics helps companies to find the most profitable customer and allows them to justify their marketing effort, especially when the competition is very high. Predictive analytics helps organizations to predict churn, default in loan payment, brand switch, insurance loss and even the outcome in a football match. There is ample evidence from the corporate world that the ability to make better decisions (by management executives) improves with analytical skills. This chapter will provide an in-depth knowledge of business analytic techniques and their applications in improving business processes and decision-making.

Section 4
Design Solutions for Website Effectiveness

Chapter 13

Web security threats have undergone much sophistication compared to their initial introduction and they are becoming more & more evolved every day. The evolution might be in terms of new ways of attack or bringing in resistance to using simulated OS or VM environments. Web service architecture is a set of standard protocols to communicate secure web services. Which include policy, security, trust, secure

conversation, reliable messaging and automatic transactions. Security is one of the major issues which reduces the growth of computing and complications with data privacy and data protection continue to plague the market. A new model targeting at improving features of an existing model must not risk or threaten other important features of the current model. The architecture of web poses such a threat to the security of the existing technologies when deployed in a web-based environment. In this chapter, the different security risks presented and specific to the different security issues that has emanated due to the nature of the service delivery models.

Due to advancement of internet technologies, web based applications are gaining popularity day by day. Many organizations maintain large volumes of web site based data about individuals that may carry information thatcannot be revealed tothe public or researchers. While web-based applications are becoming increasingly pervasiveby nature, they also present new security and privacy challenges. However, privacy threats effects negatively on sensitive data and possibly leads to the leakage of confidential information. More ever, privacy preserving data mining techniques allow us to protect the sensitive data before it gets published to the public by changing the original micro-data format and contents. This chapter is intended to undertake an extensive study on some ramified disclosure threats to the privacy and PPDM (privacy preserving data mining) techniques as a unified solution to protect against threats.

The use of Information Technology through Web services has been a major technology trend in the IT industry. IT promoted as a means of reducing costs, increasing reuse, simplifying integration and creating more active infrastructures. Web services replace other methods and technologies used in design, development, deployment and integration, and management services. It also allows different applications to exchange data with one another. SOA separates functions into distinct units or services, thus users can combine and reuse them in the production of various applications via modularity of functions. Here we are taken Signature verification application for dealing all these activities like online verification, offline verification, pressure, thickness, strength, etc. Software is componentized and the components are distributed among the devices available in the distributed environment with respect to their computational strength.