# Chapter 53 Web Service Evaluation Using Probabilistic Models

S. Zimeras

University of the Aegean, Greece

# ABSTRACT

Information system users, administrators, and designers are all interested in performance evaluation since their goal is to obtain or provide the highest performance at the lowest cost. This goal has resulted in continuing evolution of higher performance and lower cost systems leading to today's proliferation of workstations and personal computers, many of which have better performance than earlier supercomputers. As the variety of Web services applications (Websites) increases, it gets more important to have a set of evaluation criteria that should evaluate the performance of their effectiveness. Based on those criteria, the quality of the services that the Web applications are providing could be analysed. This work represents software metrics that could (or need) be used to quantify the quality of the information that the Web services are providing. These measures could be useful to understand problematic frameworks during the implementation of the Websites and could lead to solutions preventing those problems.

## INTRODUCTION

During the last decade, the Web services (websites) are into the centre of managing information. As Web service could be defined tools or applications that could be used to find, manage and share information between business and science via a platform based on a specific language

Performance evaluation is required at every stage in the life cycle of an information system (like Web applications), including its design, manufacturing, sales/purchase, use, upgrade, and so on. Web applications include product, usage and development characteristics and are subjected to continuous evolution. It is needed to focus on various aspects aiming to contribute in the design and development of Web applications (Figure 1) (Kastania and Zimeras, 2010)

In general the important goal in performance evaluation is to select the right measures of performance, the right measurement environments, and the right techniques. This part will help in making these selections.

DOI: 10.4018/978-1-5225-3422-8.ch053



Figure 1. Design and development of Web applications (Kastania and Zimeras, 2010)

Evaluation is close connected with quality of services. The quality measurement of services should be based on the product characteristics that contribute to user satisfaction and on the product functions that can be present or absent. In order to measure quality the user view, the developer view (models to assure the quality of the process, quality requirements for teleservices), the product view and the valuebased view should be considered (Figure 2)

Figure 2. Web metric characteristics



7 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/web-service-evaluation-using-probabilisticmodels/188255

# **Related Content**

#### Comparing Misuse Case and Mal-Activity Diagrams for Modelling Social Engineering Attacks

Peter Karpati, Guttorm Sindreand Raimundas Matulevicius (2012). *International Journal of Secure Software Engineering (pp. 54-73).* 

www.irma-international.org/article/comparing-misuse-case-mal-activity/66408

#### Indicators for Emergency and Urgent Medical Services

Ana Paula Barbosa Sobral, Aline Rangel de Oliveira, Adalberto da Cruz Lima, Guilherme dos Santos Silvaand Patrick Fernandes Ribeiro da Fonseca (2023). *Cases on Lean Thinking Applications in Unconventional Systems (pp. 86-96).* 

www.irma-international.org/chapter/indicators-for-emergency-and-urgent-medical-services/313649

### Performance Analysis of a Distributed Execution Environment for JUnit Test Cases on a Small Cluster

Eric Bower, Tauhida Parveenand Scott Tilley (2013). Software Testing in the Cloud: Perspectives on an Emerging Discipline (pp. 96-112).

www.irma-international.org/chapter/performance-analysis-distributed-execution-environment/72228

# On the Design of a Knowledge Management System for Incremental Process Improvement for Software Product Management

Kevin Vlaanderen, Sjaak Brinkkemperand Inge van de Weerd (2012). International Journal of Information System Modeling and Design (pp. 46-66).

www.irma-international.org/article/design-knowledge-management-system-incremental/70925

#### Demystifying Ambiguous Words in Request for Proposals of Information Systems in Japan

Toru Nakamichi, Hiroki Inayoshi, Kinari Nishiura, Mariko Sasakuraand Akito Monden (2024). *International Journal of Software Innovation (pp. 1-18).* 

www.irma-international.org/article/demystifying-ambiguous-words-in-request-for-proposals-of-information-systems-injapan/358012