

Chapter 53

Web Service Evaluation Using Probabilistic Models

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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

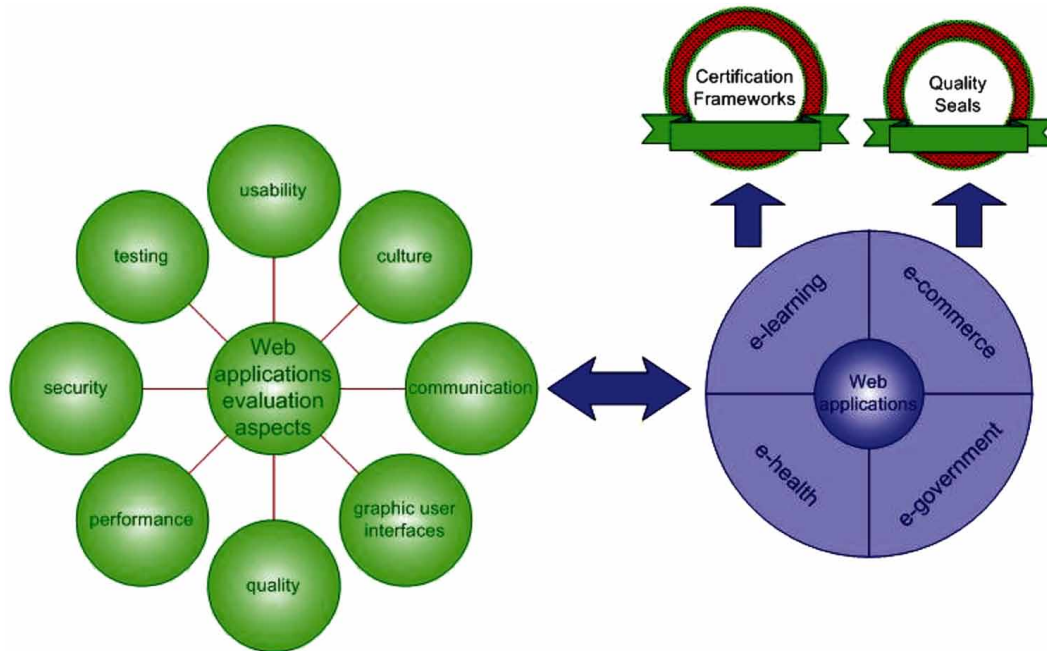
During the last decade, the Web services (websites) are into the centre of managing information. As Web service could be defined tools or applications that could be used to find, manage and share information between business and science via a platform based on a specific language

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.

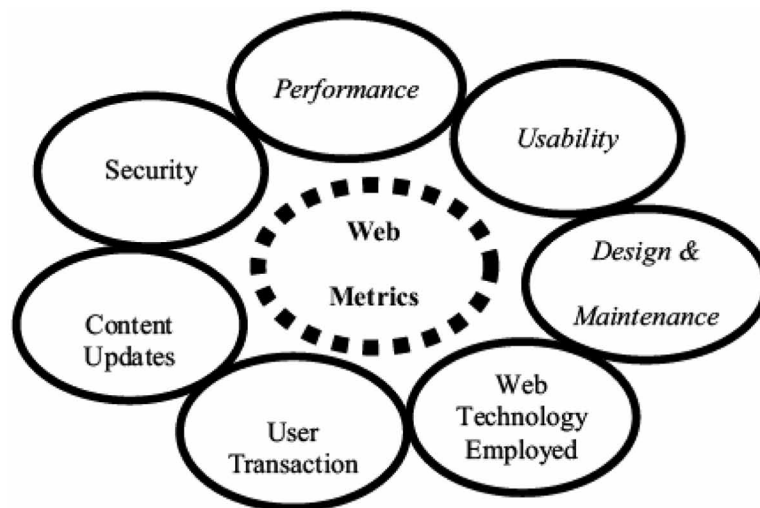
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Figure 1. Design and development of Web applications (Kastania and Zimeras, 2010)



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 value-based view should be considered (Figure 2)

Figure 2. Web metric characteristics



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