



New Model to Achieve Software Quality Assurance (SQA) in Web Application

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ABSTRACT

The quality of product and services has become one of the most important factors that influence national and international business , Software Quality Assurance (SQA) is an integral part of the software development process; with the rapid technology and development in software application, we must enhance the quality of product; and with the rapid development in interaction between the customers and web service and the technological challenges in the quality provided , we proposed new model to achieve Software Quality in Web Application and the model divide into three parts, the first part: server side, second part: Client side and the third part :Server side intersection Client side and there party factors helps to enhance SQA .

Keywords: *Software Quality Assurance, Web Service, Server side, Client side, Quality Factors, customers*

I. INTRODUCTION

Every application or business domain faces a specific set of software quality issues and software quality must be defined accordingly. It is important for each software development project to define its specific meaning of software quality during the planning phase. Such a definition contributes to the basis for setting objectives and practical measures of quality progress and determination of readiness for release to customers [1].

Software Quality Assurance (SQA) is a planned and systematic approach to ensure that software processes and product and products confirms to the goals of SQA are to improve software quality by appropriately monitoring both software and the development process the ensure full compliance with the established standards and procedures[2].

The software quality assurance must be used to make a balance between quality and productivity [3].

Quality improvements affect operations performance in various ways, such as increasing revenue, reducing costs and improving productivity. Quality has been regarded as one of the major drivers of competitive strategy in every industry [4].

Quality management and assurance is a common concept in today business in fact many of their flawed approach to quality management. So, in section II we will present the related work about our problem and any related papers that is interested in our approach, in section III we will describe and present the model to solve the quality assurance, in section IV we will describe and present describe our model approach, finally we will discussion and conclusion the results.

II. RELATED WORKS

There are more and more research interests in software quality assurance because it's very important in software product.

Many researchers have developed different quality frameworks. For example, Garvin [4] developed a quality framework considering an eight dimension product quality and Parasuraman et al. [5]

Capability Maturity Model Integration (CMMI) was developed by the software Engineering Institute of Carnegie-Mellon University under the sponsorship of the US department of defense. Beginning with the Capability Maturity Model of Software (SW-CMM) and now continuing with the Capability Maturity Model International (CMMI) framework < software development organization have achieved significant gain in their ability to develop and deliver system with predictable results [6].

ISO/IEC 90003:2004 International Organization for Standardization (ISO) is the world's largest developer for standards. It was set up in 1947 and is located in Genva, Switzerland. The International Standard which ISO develops are very useful because they contribute to making the development, manufacturing and supply of products and services more efficient, safer and cleaner, the leading global organization that prepares and publishes international standard for all electronic, electronic and related technologies. It was set up in 1906 and is also located in Geneva, Switzerland. Both standards organization are supported by national member bodies. These member bodies participate in the standards writing process through technical committees [7, 8 and 9].



III. MODEL TO PROVIDE SQA

Here we propose a model that helps to maintain and improve the quality and required, The SQA in website the operation is very complex, including Provisions to achieve quality assurance, especially because of their specificity for the software and that was the rapid development of sites should we have to strengthen the quality of their competition and also to maintain the service provided by this site, We sure this model is a enhancing and help to saving the Quality Assurance in Website in work between the provider and customers in the same, the model less than from the critical stages in life cycle of the website the services so all parties of the model is very important client side , server side and server side intersection client side to achieving the Quality Assurance and to achieve this there are a total of the requirements necessary to achieve the desired goal of quality assurance in the locations as in Figure 1 below.

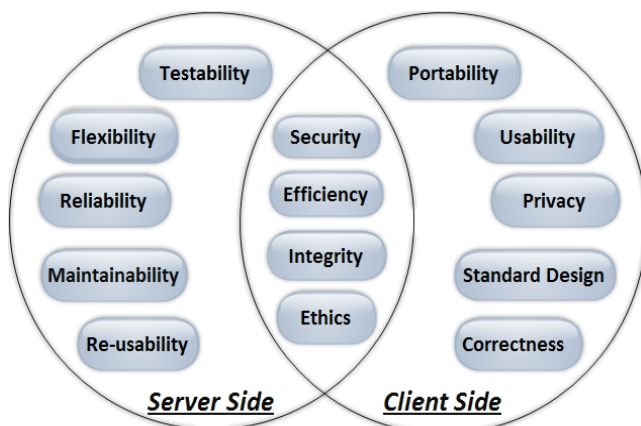


Figure 1: Model SQA in Website

For achieving the SQA for website we must use all factors to enhance the SQA in third party and the following them:

A. Server Side Factors

Server side operations are concerned with the sending of the web page data from the server to the web page visitor's browser. In the case of Static Web Pages the data is simply served immediately upon request for the data from the visitor's browser. If the requested page is a Dynamic Web Page then any preprocessing of the page is carried out and the output is then served to the visitor.

1. Testability:

Testability requirements for the ease of testing are related to special features in the programs that help the tester, for instance by providing predefined intermediate results and log files.

The goal of increasing the testability of software is not just to detect defects but more importantly, to detect defects as soon as they are introduced. Thus, reducing the cost and time to fix the bug and producing higher quality software each build of the release it is important to be able to verify every requirement, both explicitly stated and simply expected. Testability means the ability to verify requirements.

2. Flexibility:

The ease with which a system or component can be modified for use in applications or environments other than those for which it was specifically designed Flexibility normally refers to the ability for the solution to adapt to possible or future changes in its requirements. When you design or build a solution you should try to cater for these changes which inevitably arrive in the future.

3. Reliability:

Reliability requirements deal with failures to provide service, they determine the maximum allowed software system failure rate, and can refer to the entire system or to one or more of its separate functions.

Reliability tests measure the ability of the system to keep operating for a long time without developing failures.

4. Maintainability:

The capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to changes in environment, And in requirements and functional specifications.

5. Re-usability :

Reusability requirements deal with the use of software modules originally designed for one project in a new software project currently being developed.

B. Client side Factors:

Client side operations are performed on the visitor's computer by the users Internet browser to display the web page as the data is received from the server.



1. Portability:

Portability requirements tend to the adaptation of a software system to other environments consisting of different hardware, different operating systems, requirements make it possible to continue using the same basic software in diverse hardware and operating systems and designed and programmed to any explorer in display our web site in the same size because some explorer have different structure and features

2. Usability:

Usability is easy to use the Software must be usable, without undue effort, by the type of user for whom it is designed. This means that it should have an appropriate user interface and adequate documentation.

3. Privacy:

Privacy requirements specify how data privacy is to be maintained, As the Web provides many mechanisms to interlink data across systems, it is important that it keeps the possibility for users that want or need it, to keep their personal information private and fragmented.

4. Standard Design:

Web Design and Applications involve the standards for building and Rendering Web pages, including HTML, CSS, SVG, device APIs, and other technologies for Web Applications ("WebApps"). This section also includes information on how to make pages accessible to people with disabilities (WCAG), to internationalize them, and make them work on mobile devices.

5. Correctness:

Correctness requirements are defined in a list of the software system's required outputs and the output is very important for customer and users because the data must be clear and newest at the time 24/24.

C. Server side Intersection Client side Factors:

That the same grouping between the server side and client side factors to enhance the quality assurance web site and that is very important to help into the find quality assurance.

1. Security:

Security is today a relevant requirement for any distributed application, and in particular for these enabled by the Web such as firewall for anti-denial service and antivirus server, to protect from any attack and encryption server with, the important data and use certification security such as SSL to enhance the data security and anti-break of service.

2. Efficiency:

Efficiency requirements deal with the hardware resources needed to perform all the functions of the software system in conformance to all other requirements and the bandwidth in transfer the data between the server and client and the speed up in line internet connection must be high speed.

3. Integrity:

Integrity requirements deal with the software system security; it is the requirement that data and process be protected from unauthorized modification.

4. Ethics:

Important factors in quality is the ethics that the website does not attack a religious community or geographical areas or working on the immorality and corruption and encourage hatred between human beings and of the regions cannot be there the quality of the content provided through this site versa must be served Services serve the human way or optimal content helps to be fraudulent to users and we must be mindful of our ethics offices with all segments of society and his message to be Semitic, and that does not use user information to expose their affairs. And the developers and user are having the same Responsibility.

IV. RESULTS AND VISION FOR MODEL

We sure the model is enhancing and will help to save the Quality Assurance in Website in work between the provider and customers in the same, the model less than from the critical stage in life cycle the services so all parties of the model is very important client side, server side and server side intersection client side to achieving the Quality Assurance.



V. CONCLUSION

In this paper, we have tried to solve and add some new model to support the Website Quality Assurance because day by day, all users are ready to use the website and all applications converts the windows applications to Web Application and we must enhance the Quality Assurance in the party of website from the Server Side and Client Side and the factors influencing both and we must to saving into website in all factors and in future work I like to create mode to check up that all factors in our model, to make sure that the factors work in true way .

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